

Rock Products

DEVOTED TO THE PRODUCTION
OF ROCK AND ITS PRODUCTS

Vol. V. No. 24.

LOUISVILLE, KY., NOVEMBER 22, 1906.

MANUFACTURED PRODUCTS
AND CONCRETE EDITION

Ask for Rates on this Space.

UNION MINING COMPANY,

Manufacturers of the Celebrated

MOUNT SAVAGE
FIRE BRICK
GOVERNMENT STANDARD.

DEVOTE a special department to the manufacture of Brick particularly adapted both physically and chemically to

**Lime Kiln and
Cement Kiln
Construction**

Large stock carried. Prompt shipments made. Write for quotations on Standard and Special shapes, to

UNION MINING CO.,
Mount Savage, Md.
CAPACITY, 60,000 PER DAY.
ESTABLISHED, 1841.

DRY UP YOUR TROUBLES

WITH OUR

Drying Machinery and Presses
THE BILES DRIER COMPANY

Both Long Distance Telephones

LOUISVILLE, KENTUCKY

Ottawa Silica Co.'s Washed White Flint Sand

Is used for sawing stone in more than a dozen states. Cuts more and lasts longer than any other sand on the market. Unexcelled for Roofing, Facing Cement Blocks, White Plaster, etc. Freight rates and prices on application.

OTTAWA SILICA CO., . . . Ottawa, Ill.

"Howard Cement"

IT IS NON-STAINING.
IT IS WHITE.
IT IS NON-FREEZING.

HOWARD CEMENT PLASTER the most perfect wall plaster made

Favor us with your inquiries. **Howard Hydraulic Cement Co.,** CEMENT, GEORGIA.



Phoenix Portland Cement UNEXCELLED FOR ALL USES.

Manufactured by

PHOENIX CEMENT CO.

NAZARETH, PA.

Sole Selling Agent **WM. G. HARTMAN** CEMENT CO.,
Real Estate Trust Building PHILADELPHIA, PENNSYLVANIA

"RELIANCE" BELT ABSOLUTELY BEST

FOR GRIFFIN MILLS
FOR TUBE MILLS
FOR BALL MILLS

Chicago Belting Company
MAKERS

67-69 South Canal Street,

SEND US YOUR SPECIFICATIONS.

CHICAGO, ILL.

ALMA Portland Cement

STANDARD BRAND
OF
MIDDLE WEST.

Specially Adapted to all Reinforced Concrete and High-Class Work.

Alma Cement Co.,
WELLSTON, OHIO

DEXTER Portland Cement

THE NEW STANDARD

Sole Agents **SAMUEL H. FRENCH & CO.,** Philadelphia



Invest Your Advertising
Money Where it Will Talk.
ROCK PRODUCTS Does the Trick.

Improved Shield Cement

The Best Natural Cement
With 3 parts sand—425 lbs. 1 year.
Economical for Concrete.

LAWRENCE CEMENT CO.
OF PENNA.

SIEGFRIED, PA. PAMPHLET FREE.



MARQUETTE PORTLAND CEMENT

Gives Absolute Satisfaction for All Kinds of Concrete Work.

MARQUETTE CEMENT MANUFACTURING CO.,

MILLS: LA SALLE, ILL.

SALES DEPARTMENT: MARQUETTE BLDG., CHICAGO.

Chicago Portland Cement Co.



MANUFACTURER OF...

**"CHICAGO AA"
PORTLAND CEMENT.**

We make one brand only.

The best that can be made.

A Standard Portland for Universal Use.

Present daily output
6,500 barrels.
Increasing to
17,000 barrels.



Plants at
Chicago and
Pittsburg.

Universal Portland Cement Company

Successor to Cement Dept. Illinois Steel Co.
The Rookery Building, CHICAGO, ILL.



Manufacturers: Sales Office, Holland Building, St. Louis.

HYDRATED PORTLAND LIME



IS IDEAL FOR
**Waterproofing
Concrete Blocks**
SAVES MONEY. TRY IT.

—FOR INFORMATION AND PRICES, WRITE—

CHICKAMAUGA CEMENT CO.,

Sole Manufacturers.

CHATTANOOGA, TENNESSEE



ONE GRADE—ONE BRAND.

The Recognized Standard
American Brand.

General Offices: EASTON, PA.

SALES OFFICES:

541 Wood, PITTSBURGH.

Builders Exchange, BALTIMORE.

Marquette Building, CHICAGO.

Builders Exchange, BUFFALO.

Board of Trade Bldg., BOSTON.

Park Row Bldg., NEW YORK.

Harrison Building, PHILADELPHIA.



"LIMOID"
SEWER PIPE
FIRE BRICK
PLASTER, ETC.



Charles Warner Company



LAND TITLE BUILDING,
PHILADELPHIA.

WILMINGTON,
DELAWARE.



The Best Portland Cement Is

"LEHIGH"

MANUFACTURED BY

Lehigh Portland Cement Co.

ALLENTOWN, PA.



Write for Catalogue.

Capacity, 7,000,000 Yearly.

Buckeye Portland Cement Co.

ESTABLISHED 1888.

Manufacturers of the celebrated
"Buckeye" brand of



Portland Cement

"Buckeye" has stood the wear and tear in many
important places for the past fifteen years and
under the new process of manufacture is now
better than ever. ■ ■ ■ ■ ■

WE INVITE YOUR
CORRESPONDENCE.

Bellefontaine, Ohio.

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Rock Products

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OF ROCK AND ITS PRODUCTS

Vol. V. No. 24.

LOUISVILLE, KY., NOVEMBER 22, 1906.

MANUFACTURED PRODUCTS
AND CONCRETE EDITION

PITTSBURG AND VICINITY.

Development of Concrete Construction and the Manufacture of Concrete Building Materials in the Iron City.

(Continued from October 22.)

PITTSBURG, PA., November 16.—In this issue, we will take up the cement and concrete block end of the industry, although in the beginning, it might as well be acknowledged that in the manufacture of these building blocks, Pittsburg is still considerably behind almost all of the other cities in its class. There are a number of reasons for this, chief among which is the fact that there is such an abundance of stone in this part of the country that persons contemplating the erection of this class of buildings for residences are usually in such circumstances that they are able to afford the additional expense incurred, and have the natural stone. Cement brick may be said to have practically the same applications. As is well known, Pittsburg is to all purposes the center of the brick-making industry, and both brick and stone can be used as cheaply here as in any part of the world.

It is only within the past year, however, that the cement building block for suburban residence construction has been used to any extent whatever, and within the past three or four months, the use has started to become general. Indications are now that during the coming year there will probably be as much of this material used in the Pittsburg district proper as there will be in any place in the country, with the single exception of a number of the States in the Middle West, where it has gained an immense foothold, and is one of the most popular materials.

There are but few plants in this section built for the manufacture of these blocks, one of the most important of which was described in the first installment of this article, in the issue of October 22. This was the plant of the Standard Building Construction Co., where the blocks are manufactured under the process discovered and patented by Charles F. Buente, president of the company. Another notable example of the plant for the manufacture of the concrete building block, concrete brick and other similar products that will be described in the course of the article, is that of the Fireproof Penetrable Brick Co., at Elrod Tower, on the main line of the Baltimore and Ohio railroad, three miles from McKeesport, and about fifteen miles above Pittsburg.

This company is incorporated with a capital of \$150,000.00, of which over one-half has been paid in. It is of recent formation, and was organized by the following officers and directors: W. J. Sheldon, president; Charles Hallett, treasurer; C. J. Sheldon, secretary; Thomas J. Lewis, auditor; E. L. Schmidt, chief engineer; T. B. Black and Joseph Pratt, superintendents; W. J. Sheldon, C. J. Sheldon, Charles Hallett, T. B. Black, H. C. Clark, F. S. Gleason and Thos. J. Lewis, directors. Last spring the company started the erection of a large plant at Elrod Tower, which has just been completed, and is now being put in operation. Parts of it have been running for several weeks, and the remainder will be placed in operation as soon as possible.

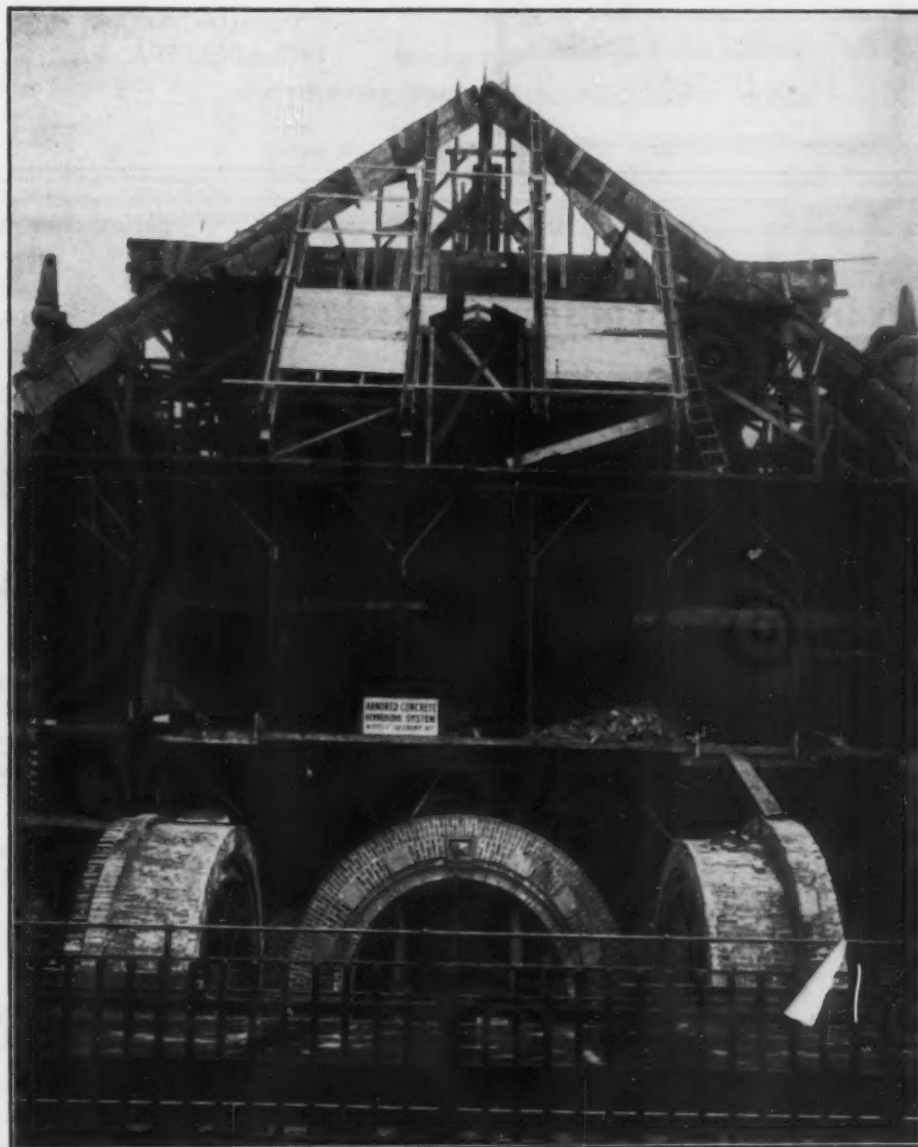
The plant consists of a large crusher building, in which the machinery for crushing and pulver-

izing the materials for the manufacture of the finished product, is housed; a concrete post and shingle building; a Pratt patent sewer inlet building; a building for the manufacture of concrete railroad ties; an office building; storage reservoir to furnish water for the plant; carpenter shop; machine shop; blacksmith shop; scale house; stable, and three brick buildings for various purposes. A siding direct from the main line of the Baltimore & Ohio railroad runs into the plant, and shipping facilities are the best. The plant cost about \$50,000.00. About 100 men are employed at the present time, and this force will be greatly increased

between now and spring as the other departments of the company are placed in full operation.

The production of this plant is different from that of any other plant manufacturing artificial stone and building block in the world. The process used is the discovery of the president of the company, W. J. Sheldon, and the materials used consist of furnace slag, cement and chemicals known only to the inventor. The furnace slag is procured from the blast furnaces of the National Tube Co., which was located only a short distance from the plant, and the company has a contract

(Continued on Page 32.)



PENNSYLVANIA STATION, ALLEGHENY, PA., SHOWING MOULDS FOR ROOF AND ROOF TRUSSES, AS WELL AS FLOORS AND SUPPORTING BEAMS.

Vol. II. August, 1906, No. 9.

CEMENTOLOGY



Circulation 10,000

FORM OF BRIQUETTE

MOULDS

MIXING

MOULDING

STORAGE OF TEST PIECES

Published by
The Whitehall Portland Cement Co.
Philadelphia
Atlanta Boston

Front cover and inside of back cover of

CEMENTOLOGY

Note what Jim Smith says regarding
delivery.

We not only have all the others going in the prompt
delivery of cement, but we have the cars going too.

Send us your order in the morning and we will give you
the car number of your shipment before noon.

Whitehall Portland

is synonymous with prompt delivery and guaranteed
uniformity.

Don't fail to read September Cementology
Vol. II, No. 10, illustrating and describing
Reinforced Steel Concrete Construction.

Sample copy free on application to Principal Sales
Office of

The

Whitehall Portland Cement Co.

1719-1724 Land Title Building,

PHILADELPHIA, PA.

Candler Building, Atlanta, Ga.

Oliver Building, Boston, Mass.

WHITEHALL PROMPTNESS.

Settin' down by the station there,
Smokin' and drinkin' in country air,
I seen great lots of cars go past,
An' every car from first to last,
Big an' little, eech an' all,
Wuz labeled with a big "WHITEHALL".

Seein' them loaded cars go past,
I sez to old Josh Bent, "Dog dast
If I just rightly understand
How they ship cement all thru the land
From the WHITEHALL mill, an' ship so quick
Without no holdin' back. It's a trick
Worth gittin' onto, Josh," sez I.

Sez Josh, "I'll bet a punkin pie
Then chaps that runs the WHITEHALL mill
Works nite an' day, so's they can fill
All them big orders that they get.
An' I'll just vow it makes 'em sweat!
But sweatin' is the life of trade.
You can't now get yure fortune made
Unless you up an' pitches in
An' works an' works thru thick and thin!
Now, Jim, I reckon you an' me
Ain't built that way, fur's I can see!

While you an' me we set an' set
An' smoke an' talk; why, Jim, I bet
Them there cement men's doin' biz,
An' doin' most of what there is
Fer builders wantin' cement in a hurry.
I reckon it would fluster an' flurry
Me an' you to work so hard;
Now, wouldn't it, say, Jim, old pard?"

An' all the time old Josh Bent
Wuz talkin' them cars of cement
Went rumblin', rumblin' down the line.
I tell you, boys, it's mighty fine
To tink no builders is held back
By findin' WHITEHALL'S delivery slack,
But git their shipments on the dot,
Or day before es like es not!
Fer WHITEHALL promptness ain't no myth,
It ain't, indeed!

Yer frend,

JIM SMITH.

Use Louisville Hydraulic Cement for Foundations

and invest the amount saved thereby otherwise. Concrete made of Louisville Cement is strong enough for foundations of all kinds, and by the use of it a great saving is effected. The following letter from a well-known firm of Chicago architects, written when Louisville Cement was not ground so fine as it is to-day, shows its good quality and suitability for foundations:

CHICAGO, ILL., Sept 29, 1898.
Mr A. L. Kanagy, care of Western Cement Co., Louisville.

Dear Sir:—In reply to your question concerning the concrete foundations of power house of the South Side Elevated Ry. Co., at 40th and State Sts., Chicago, which foundations were made of Louisville Cement, we beg to say that the foundations have turned out to be perfectly satisfactory, and behaved all the time as we expected they would.

The controversy which arose at one time concerning this was caused by no fault of the concrete or of the cement.

It is true that one of the engines was wrecked and twisted off the foundation bolts without doing any injury to the foundation.

Yours very truly, D. H. BURNHAM & Co.

Louisville Cement mortar made in the proportion of 1 cement to 2 sand, will develop a tensile strength of over 100 pounds per inch in seven days, and will withstand a crushing strength of over 1,000 pounds per inch in twenty-eight days.

Louisville Cement in bags of 4.77 cubic feet per barrel, costs less than 50c per barrel at the mills. At this price a simple calculation will show the economy of its use.

Write for pamphlets and test sheets.

WESTERN CEMENT CO.

281 West Main Street,

Louisville, Kentucky



Strength Durability Permanence

Not only laboratory tests, but results in actual
work prove the high grade quality of

Northampton Portland Cement

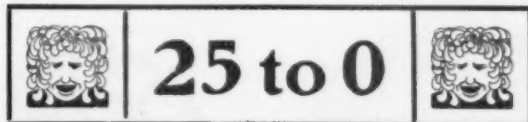
Especially adapted for Cement Blocks, Sidewalks,
and all forms of concrete and re-inforced
concrete construction.

Northampton Portland Cement Co.

No. 1 Madison Ave., NEW YORK.

Works at Stockertown, Pa.

RAH! RAH! RAH!



That's the way Rock Products' Advertisers win the Game.

WE ARE ALWAYS READY TO ROOT FOR YOU.

OWL CEMENT

is not the only Portland Cement,
but one of the best manufactured.
Pamphlet sent on application.

GERMAN-AMERICAN PORTLAND CEMENT WORKS,

E. L. COX, General Sales Agent,
1511 Marquette Building, Chicago, Illinois.

Members Illinois Lumber Dealers Association.

WE SELL TO DEALERS ONLY.

Improved Utica Hydraulic Cement

The finest ground and highest grade Natural Cement manufactured in the U. S. Every car tested by Robt. W. Hunt & Co., and their test furnished on every car shipped.

MEACHAM & WRIGHT CO. Sole Agents, Chicago.

BANNER CEMENT CO.,

MAKERS OF THE FAMOUS BANNER BRAND OF

LOUISVILLE CEMENT.

Guaranteed that 90 per cent. will pass a
ten thousand Mesh Sieve.

WE SELL TO DEALERS ONLY.

GENERAL OFFICE: MASONIC TEMPLE, CHICAGO, ILL.

CHARLES W. GOETZ LIME & CEMENT CO.

MANUFACTURERS OF AND DEALERS IN

**Glenwood Lime, Banner
Brand Louisville Cement,
Portland Cements and
Building Materials.**

St. Louis, Mo.

Newaygo Portland Cement Co.

Sales Office: Michigan Trust Building,

GRAND RAPIDS, MICH.

Write us for prices. Send us your orders

"KOSMOS"

Kosmos Portland Cement is the product of a model plant, using high grade raw materials and under the direction of a staff of experienced cement engineers.
It is guaranteed the equal of any American Brand of Portland Cement and will be found to run uniform



in color, strength and fineness. It is suitable for any class of work and is especially recommended where the requirements are exacting.

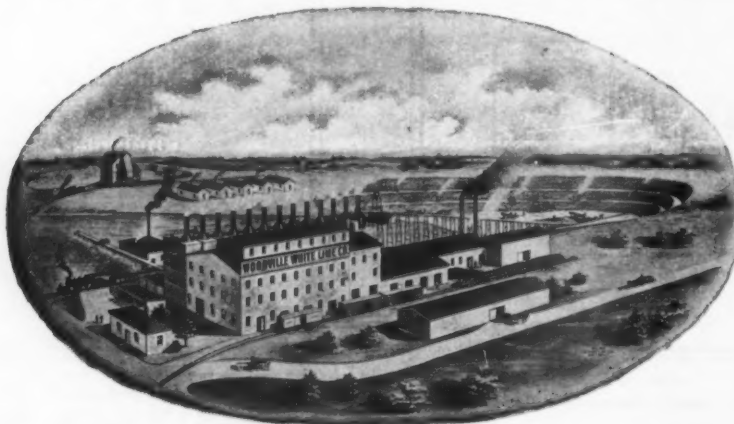
Manufactured by the

KOSMOS PORTLAND CEMENT CO., Inc.,

BUSINESS OFFICE: 53-54 Todd Building, Louisville, Ky. WORKS: Kosmosdale, Jefferson Co., Ky.

Tell 'em you saw it in ROCK PRODUCTS.

OUR HIGH GRADE PRODUCTS



Largest Capacity of Hydrated Lime in the United States.



Woodville White Lime Company, WOODVILLE, OHIO.

The Strongest White Lime

ON THE MARKET

Uniform Quality

Finest Grain

The American Clay Machinery Co.
WILLOUGHBY, OHIO

May 16, 1906.

The Mitchell Lime Co.,
Mitchell, Ind.

Dear Sirs:

Replying further to your favor of the 8th inst requesting us to advise you the result of practical test of your lime in the manufacture of sand-lime brick. We are pleased to advise you that the lime hydrated easily and the brick made from it were first-class in every respect.

We have forwarded some samples of it to Mr. Elkus of the Indianapolis Composite Brick Co. and he can probably advise you further.

Very truly yours,

The American Clay Machinery Co.
by W. J. Burke.

MITCHELL LIME COMPANY
MITCHELL, INDIANA

WESTERN LIME CO.

HUNTINGTON, INDIANA

MANUFACTURERS OF

LUMP LIME

ALSO, DIAMOND BRAND SUPERIOR WHITE FINISH

A HYDRATED LIME

AND A GROUND AND FERTILIZER LIME

Capacity 4,000 barrels or 10,000 bushels per day. Capacity of Hydrated Lime, 120 tons per day. Our LUMP LIME as well as our HYDRATED LIME is the very best obtainable for all purposes for which a good lime is needed in erecting buildings. Our HYDRATED LIME is absolutely the best finishing lime on the market.

FOWLER & PAY,

Brown Hydraulic Lime, Austin Hydraulic Cement, Jasper Wall Plaster, Brick, Stone.

CEMENT WORKS: Austin, Minn.
PLASTER MILL: Ft. Dodge, Iowa.
WAREHOUSE: Minnesota Transfer.

MANKATO, MINN.



ASH GROVE
WHITE LIME ASSOCIATION
MANUFACTURERS OF
High Grade
White Lime.
KANSAS CITY, MISSOURI.

Tell 'em you saw it in ROCK PRODUCTS

The Ohio and Western Lime Company,

WORKS AT

Fostoria, Ohio.
Gibsonburg, Ohio.
Sugar Ridge, Ohio.
Tiffin, Ohio.
Huntington, Indiana.
Geneva, Ohio.
Limestone, Ohio.
Lime City, Ohio.
Portage, Ohio.

MANUFACTURERS OF AND WHOLESALE DEALERS IN

Ohio White Finishing Lime, Ground
Lime, Lump Lime, Fertilizer, Hydrate
Lime, Cement, Plaster, Hair, &c., &c.

Capacity
8000 Barrels
Per Day.

Offices: TOLEDO, O. 209-210- 11 Chamber Commerce Bldg.

HUNTINGTON, IND.

"IF IT IS

LIME

WE MAKE IT."

Lump - Barreled - Hydrated - Ground.

STRONGEST IN OHIO.

We are not connected with any Trust or Combination.

WRITE US

PHONE US

The Scioto Lime and Stone Company, Delaware, Ohio

**Big
B**



Lime.

BIG B LIME

ITS HISTORY IS A STORY OF SUCCESS.

The Building Trades' Barometer. The Iron and Steel industry promises increased activity. It is predicted that a new tonnage record in that business will be established.

This means a large demand for LIME, and transportation facilities taxed. Isn't it wise to arrange early for your supply of LIME?

BIG B's quality is unsurpassed. That means satisfied and contented contractors for you. Our quick shipping facilities mean fresh lime on short notice.

A POSTAL CARD WILL BRING OUR 1905 MEMORANDUM BOOK.

THE NORRIS AND CHRISTIAN STONE AND LIME CO.
MARION, OHIO.

Tell 'em you saw it in ROCK PRODUCTS.

DOES NOT DETERIORATE WITH AGE.



WILL NOT SLACK. ALWAYS READY FOR USE.

Excelsior Hydrated Lime

A PRODUCT OF MERIT.

The best prepared Lime in the market. Is superior to hot Lime for all purposes. Will not deteriorate. Absolutely pure and free from foreign ingredients. Successfully used for more than two years by the largest users of Hydrate in the country.

SEND FOR PRICES.

MADE ONLY BY

The Cleveland Builders Supply Co. Cleveland, O.

Try us on your Portland Cement requirements

Farnam "Cheshire" Lime Co.

OF CHESHIRE, MASS.
MANUFACTURERS OF THE

Celebrated "Cheshire" Finishing Lime.

Well known throughout New York and the Eastern States as the finest finishing lime manufactured. The special feature of this lime is its quick and even slacking, thus preventing any cracking or checking when put on the wall. It is the best lime used in the country today for all

HIGH GRADE FINISHING WORK

Selling Department, 39 Cortlandt St., N. Y., C. J. CURTIN, Pres't.

ROCHESTER LIME CO.

209 Main St., West, Rochester, N. Y.

MASONS' SUPPLY DEPOT.

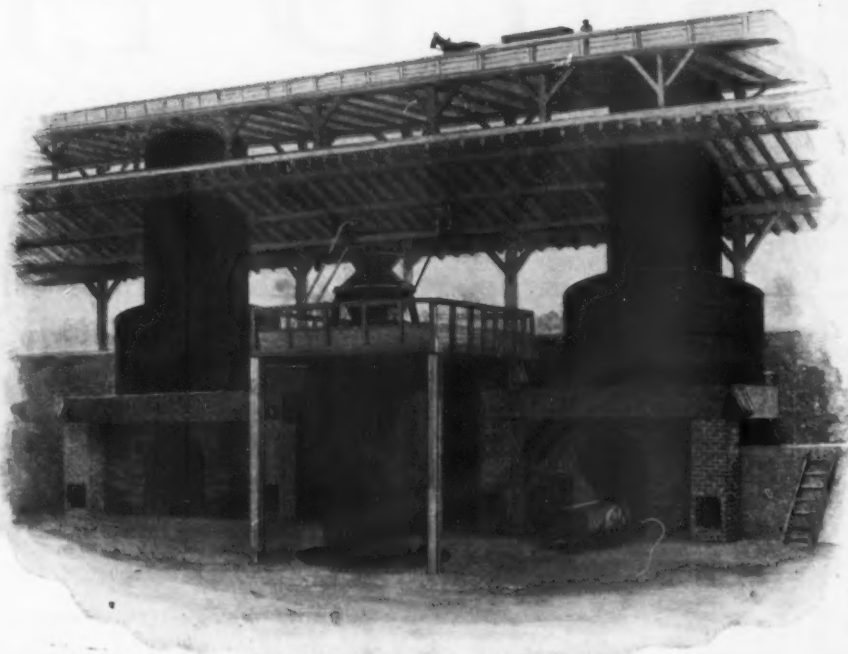
Manufacturers of, and Wholesale Dealers in

Snow Flake Lime, Cement Building Blocks, Alpha Portland Cement, Hoffman Rosend de Cement, Cummings Akron Cement, Kings Windsor Wall Plaster, Kings Plaster Paris, Fire Brick, Fire Clay, Dynamite, Caps, Exploders, etc.

JOIN THE INFORMATION BUREAU DEPARTMENT. All it costs is to be a regular subscriber to the paper. The object of this department is to assist our subscribers in every possible way.

Gas Producer Plant of the New England Lime Co., New Milford, Connecticut.

PRODUCER GAS
Makes the Best Lime
It increases the
Capacity of a Plant
and Reduces the
Fuel Bill



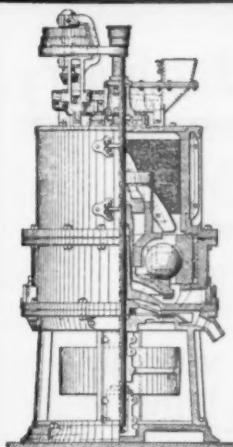
The Total Cost of
This Installation
Will be Paid for by
the Saving Effected
During the First
Year of Operation

We are now equipping a second plant for above company at Canaan, Ct.

MORGAN CONSTRUCTION CO., Gas Producer Dept., Worcester, Mass.

Pittsburg Representative, Geo. A. Harwood Company, 2011 Farmers Bank Building, Pittsburg, Pa.

Tell 'em you saw it in ROCK PRODUCTS.



Fuller-Lehigh Pulverizer Mill

The Best Pulverizing Mill Manufactured

Exhaustive tests in all departments, in competition with the most approved grinding machines in use, have demonstrated the superiority of our machine

OUR CLAIMS:

Greater Output

Better Fineness

Fewer Repairs

Dustless

Few extracts from letters received from users:

"I think you have an ideal mill and one which I believe will be recognized as the most economical and satisfactory machine on the market."

"We feel that after these mills are all installed, our Raw grinding end will be in excellent shape."

"This is certainly a very cheap grinding and I congratulate you on your being able to produce a mill that is equal to these figures."

If interested, write us for further information

LEHIGH CAR, WHEEL & AXLE WORKS, CATASAUQUA, PA. U. S. A.

The Bates Engineering and Construction Co.

DESIGNERS AND BUILDERS OF

Lime Kilns and Complete Lime Plants

Plans and estimates furnished for coal, wood or producer gas kilns. Designers and builders of the only known kiln that will burn a soft stone economically. Sixteen years' experience. Contracts taken in any part of the country. :: :: :: ::

OFFICE: GREAT BARRINGTON, MASSACHUSETTS.

WHOOOP 'EM UP!

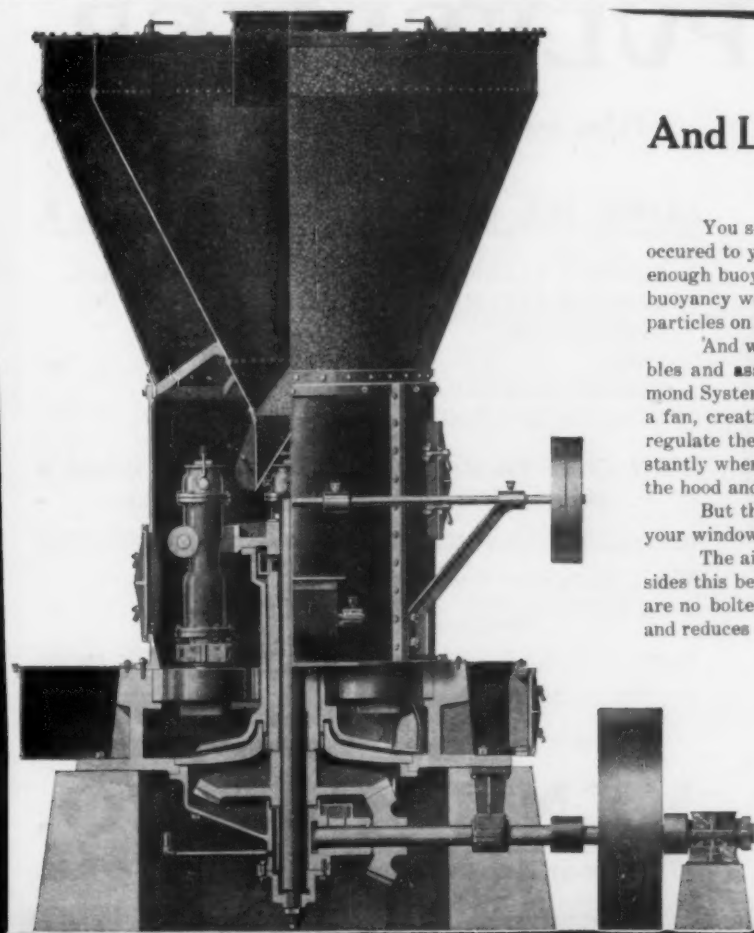
YOU'RE NOT IN BUSINESS FOR FUN OR GLORY

Here's the Way: Get some **Good** printed matter—Circulars, Blotters, Catalogues—and send to a selected list of possibilities. Then do it again. Then do it again and keep it up. It will pay if the printing is right—that's where we come in. We print anything from a visiting card to a 100-page newspaper. Also ruled forms, blanks, blank books, loose-leaf sheets and index cards.

The Franklin Printing Co.,

PRINTERS, PUBLISHERS, BINDERS

430-432 W. Main St., LOUISVILLE, KY.



GET UP—NOW, And Look at the Dust on your Window Sill!

You see how evenly it is deposited and how uniform the particles are. Has it occurred to you why this is true? Isn't it because the free atmosphere has only enough buoyancy to bear dust particles of a certain weight? If this atmospheric buoyancy were adjustable, couldn't you regulate accurately the size of the dust particles on your window sill?

And wouldn't this, applied to your pulverizing system, end some of your troubles and assure you of sure results? Really, gentlemen, this is just what the Raymond System of Air Separation does. Above the mill is fitted a hood. In it operates a fan, creating a suction. You want to grind a certain fineness so you need only to regulate the speed of the fan and that controls the "atmospheric buoyancy." Instantly when any of your material is pulverized to the proper mesh, it is sucked into the hood and goes eventually through pipes to the place you want it.

But the too-big particles, for the same reason you don't find cobble-stones on your window sill, remain in the mill.

The air in the room is clean. Your men don't have to breathe poison, and besides this benefit to your men it saves you a good many true-ringing dollars. There are no bolters, no men to repair them. It reduces horse power, multiplies capacity, and reduces operating and repair expenses.

Tell us your pulverizing troubles. Write us to-day.

Raymond Bros. Impact Pulverizer Co.

141 Laflin Street,

CHICAGO

Tell 'em you saw it in ROCK PRODUCTS.

Economy Dictates

that the jaw-plates, cheek-plates, cones and concaves of your crushers should be made of

"Taylor-Made" **MANGANESE STEEL** "Taylor-Made"



The actual ratio of wear in "Taylor-Made" plates, as compared with other castings, has been proved by large users in hundreds of cases to warrant their use.

"THE REASON'S IN THE STEEL."

We shall be pleased to give you further information.

Taylor Iron & Steel Co.

HIGH BRIDGE, N. J.

Modern Grinding Machinery

KOMINUTERS for granulating
TUBEMILLS for pulverizing

Davidson Tubemill especially
adapted for Sand-Lime
Brick Work.

Silex Linings for Tubemills
Best Quality Dana Flint Pebbles
Forged Steel Balls

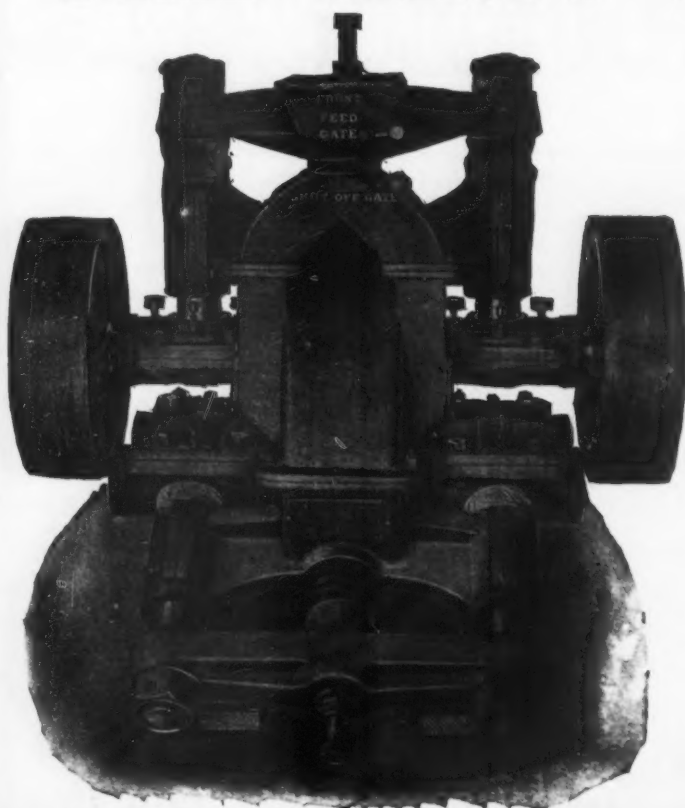
F. L. SMIDTH & CO.

ENGINEERS

41 Cortlandt St.,

NEW YORK

THE KENT PULVERIZER



Takes one inch feed. Grinds to any fineness
from 10 to 200 mesh.

GRINDS PER HOUR WITH LESS THAN 25 H. P.

CEMENT CLINKER,	40 bbls.	to 98%	20 Mesh.
CEMENT CLINKER,	12 "	" "	100 "
LIMESTONE,	2½ tons	" "	200 "
LIME,	4 "	" "	100 "
ROSENDALE CEMENT,	43 bbls.	" 90%	50 "
QUARTZ TRAP-ROCK,	4 tons	" "	40 "

You can easily figure from this what a
Kent Mill would save for you.

W. J. BELL, Esq. Supt.
NEWAYGO PORTLAND CEMENT CO.,
Newaygo, Mich.

Says:—Four KENT MILLS are driven by one 75 H. P. motor.

For Catalogs and Information, Address

KENT MILL CO.

170 Broadway,

NEW YORK.

Tell 'em you saw it in ROCK PRODUCTS.

“Selling all the Lump Lime we can make”

(From some correspondents.)

Well, so is the other fellow but—this is no argument in favor of “Lump” over Hydrate.

It's simply because the “building boom” NOW demands every pound that can be turned out and “you're only getting your share” while the boom is on.

Now then—while EVERYBODY WANTS LIME why not begin to give them a better article and make a MUCH LARGER PROFIT. (The time to make the largest profits is when the public wants your stuff.) Next season will be a top-notch one.

“Selling all the Hydrated Lime we can produce”

(From our customers.)

and producing all the time instead of shutting down in dull seasons and, (pound for pound) making 20% MORE PROFIT.

Hydrating changes your lime from a perishable to an IMPERISHABLE PRODUCT, which can be stored or shipped any distance without trouble, only freight rates limit your shipping distance.

The number of possible customers is greatly increased because there are so many uses for Hydrate besides the regular lines.

If you know all about HYDRATE, it's time to buy a CLYDE HYDRATING PLANT.

If you don't know all about it, let us tell you a few more facts.

“We like to answer questions”.

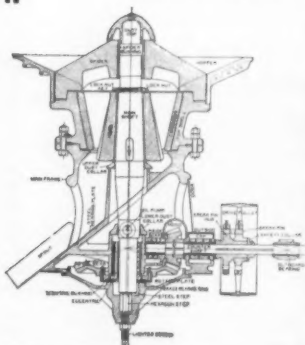
Anyway get our “booklet” and take up this important matter before next season's rush starts in.

CLYDE IRON WORKS,

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DULUTH, MINN.

THE AUSTIN GYRATORY CRUSHER IS THE ONLY ONE HAVING AN AUTOMATIC OILING SYSTEM.



The strain on the bearings of a gyratory crusher is so great that if dust reaches them or if imperfectly lubricated they are certain to be quickly destroyed and the machine laid up for repairs. The bearings of the "Austin" are enclosed in a double chamber—absolutely dust proof—and are lubricated by a constant circulation of live oil forced through the main eccentric bearing—which is the life of the machine—by an automatic pump operated directly by the gyratory movement of the main shaft. The lubrication must be perfect because the flow of oil is constant and positive.

In all other gyratory crushers there is only the discharge diaphragm to separate the dust from the bearings and gears, and a side door opens directly into the chamber containing the bearings. Dust gets into this receptacle readily and destroys the gears.

Immediately below the crushing head, in the "Austin" is placed the discharge diaphragm with dust collar the same as in any other gyratory crusher. Below this partition is a second diaphragm also provided with dust collar around the shaft and a dust cap covering the pinion, contained in no other crusher, enclosing the bearings in a double dust proof chamber and making it simply impossible for dust to reach the bearings.

At the bottom of the frame in the "Austin" is an oil cellar which is filled with oil to the level of the center of teeth in the main gear.

An automatic pump draws pure oil from this cellar, forces it through the eccentric and counter shaft bearings and any oil thrown from the teeth of the driving gear is caught by the cap and carried back to the cellar.

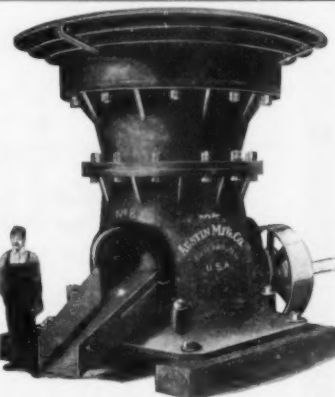
At the bottom of the cellar is a drain by means of which the impure oil can be removed insuring absolutely perfect lubrication because every part of the bearings operates continuously in a bath of pure oil.

One never has to expose the bearings of the "Austin" to dust when in operation. Fill the oil cellar to the required height and the machine must oil itself since no oil can escape from the oil cellar and therefore maintains a constant level.

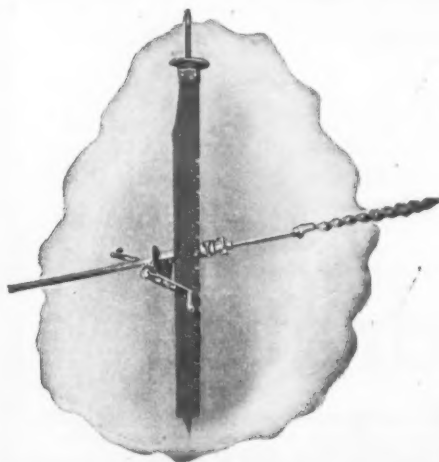
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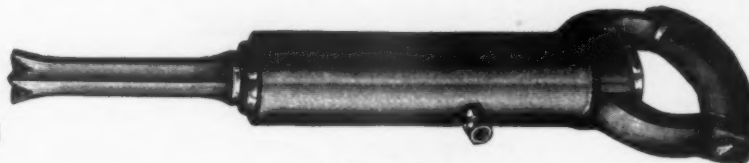
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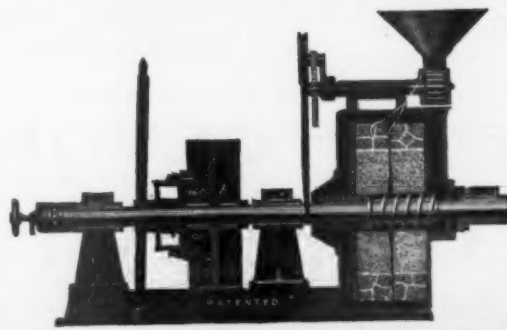
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The type of screen here illustrated is in use at a No. 8 Crushing plant for limestone (which was formerly equipped with three of the older style screens and required an outlay of \$350.00 for each 100,000 cu. yds. of stone separated. Up to the present time it has made perfect separation into five sizes of 300,000 cu. yds. with a recent outlay of \$27.00 for renewing the portion of the screen that the stone has been discharged on, and should do as much more without any additional outlay.

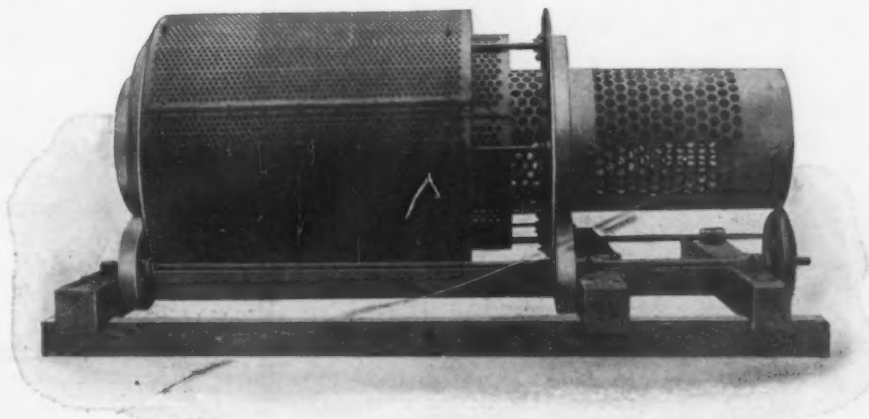
The inside or longest screen is 8 feet long and 36 inches in diameter, the next concentric screen is 7 feet 6 inches long and 48 inches in diameter, the next screen is 7 feet long and 58 inches in diameter, the next is 6 feet 6 inches long and 66 inches in diameter. With the exception of the inner screen each section is adjustable and the screen is complete without it. The figures given above give 492 sq. ft. of

screen surface which is equal to 3 screens of the old pattern, 14 feet long and 36 inches in diameter.

We claim it requires but one-fifth the power to operate our screen than the old style and yet it does the same amount of work. This is proven first, by the length of screen; second, by the size of driving pinion in comparison with gear; third, by the size of trunnions in comparison to the tread of screen. The material to be sep-

arated and weight of screen rests above the bearing points. While in the old style screen it is below the center of bearing points. The material being immediately separated by dropping into each of the concentric screens reducing the wear on screens to the minimum.

Let us know your requirements, what materials you wish separated, the amount daily and the different sizes, and we will furnish an estimate as to cost, power required, etc.



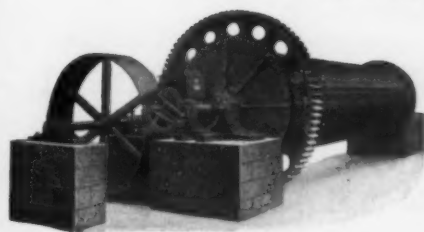
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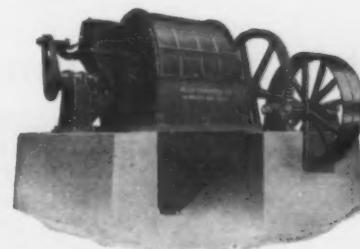
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Conveyors



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Crushers

Dryers

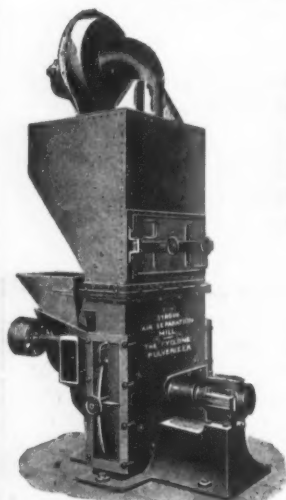
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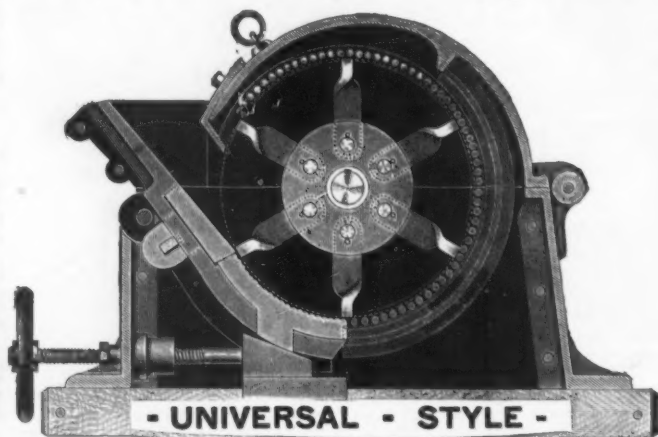
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We are manufacturers of lime hydrating machinery. We design, build and equip complete plants or any portion thereof. Our Mr. Kritzer has been aptly styled "the Father of Hydrated Lime". He has had more practical experience in this business than any other man in this country, and has personally directed the erection and equipment of the greater part of its lime hydrating plants. If business is good with you, one of our hydrating plants will increase your profits; if business is poor, one of our hydrating plants will enable you to make it good. The field for hydrated lime is practically unlimited.

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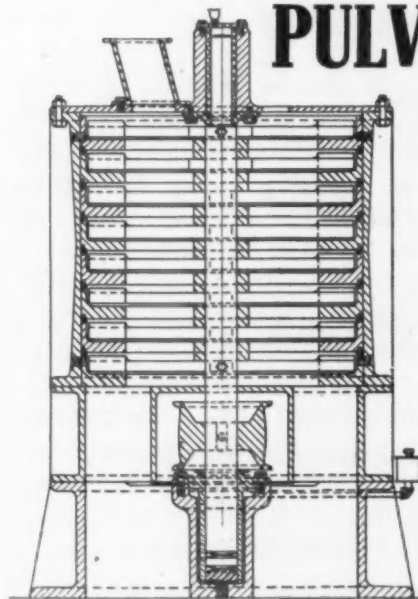
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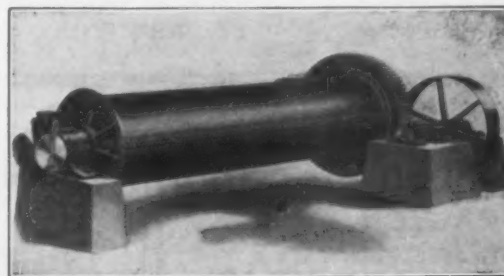
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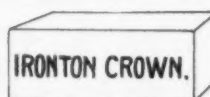
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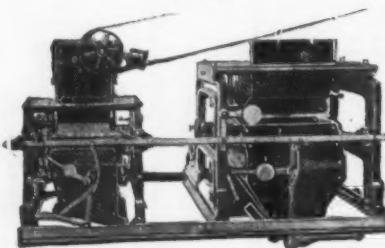
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SEMI-MONTHLY.

Entered as second-class matter December 16, 1906, at the Post Office at Louisville, Ky., under Act of Congress of March 3, 1879.

THE FRANCIS PUBLISHING COMPANY,
Publishers.

M. H. DEFEBKAUGH..... President.

A semi-monthly trade journal devoted to the interests of the manufacturers and dealers in rock products and kindred lines, including Lime, Cement, Salt, Sand, Slate, Granite, Marble, Sandstone, Grindstones, Artificial Stone, Emery Stone, Quarries, Monuments, Manganese, Asphalt, Phosphates, Plaster, Terra Cotta, Roofing and Roofing Tile, Coal, Oil, Mineral Wool, Brick, etc.

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ASSOCIATE EDITORS.

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The mission of ROCK PRODUCTS is to serve the trade in any and every honorable way possible, to promote better profits and make life more pleasant for those engaged in the business to which it caters. With this end in view, criticism is courted, and all are invited to use its columns to further ideas and suggestions for the good of the trade. The office, too, is at the service of the constituents of this paper; so when you want to buy or sell, or merely ask a question, write, and when you are in town, call and make it your headquarters.

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LOUISVILLE, KY., NOV. 22, 1906.

Never Forget to Tamp.

Tamp, tamp, tamp. Never forget to tamp. No concrete has any value unless it is tamped sufficiently into the mold. This applies to the dry mix workers who are molding blocks or bricks for building purposes as well as to the man who is pouring slush into the centering molds for monolithic or re-inforced construction. A good deal of the concrete work that has been done in 1906 is not fully up to the mark, for the reason that the engineers have depended upon the plentiful supply of water in the mixture, feeling that the pliability thereby obtained will secure the required density in the finished concrete. Such is not the case. When there is too much water to allow tamping, there is more water in the mixture than there should be. The first principle of hydraulics teaches us that water is absolutely incompressible, and it is only by tamping the water out of the mixture, that you are able to secure a dense concrete after the water of crystallization has disappeared into the mass. The tamping of the aggregate in all manner of concrete work is fully as important as having sufficient cement in the mixture.

Importance of Sand Preparation.

The preparation of the materials which compose the concrete mass is a feature which is overlooked a great deal more than it should be. Rock Products is the only publication that has ever suggested the importance of preparing the sand and the crushed rock or gravel which composes the

concrete aggregation. Damp sand is not to be recommended where the best results are expected in concrete operations. The cement which is mechanically and chemically perfectly dry, seems to insist upon coating little lumps of wet sand which prevents its distribution throughout the mass, as it would be distributed if the cement and dry sand were thoroughly mixed together first, and then added to the gravel or crushed rock in the shape of a mixture, which after being intimately mixed, should then have sufficient water added to make it a workable proposition. The drying of sand in all kinds of concrete operations is as certain to come, as the necessity for sufficient tamping has made itself felt; for every failure or partial failure of concrete work is traceable to the neglect of either one, or both of these conditions.

We Are at Your Service.

It is the province of the trade paper to furnish reliable information to the trade with regard to the industry to which the paper is devoted. The readers will readily recognize that it is impossible in every issue of the paper to give in detail, a complete exhibit of the whole industry from every possible standpoint. We try to select from out of a vast fund of information, culled from enormous correspondence and from personal visits of representatives of the paper throughout the length and breadth of the land, such matters as we believe will have an important bearing with the largest number of our readers. It is possible that the very thing that you are looking for most has been left out, in order to make room for something else for which there seemed to be greater need.

It is your privilege, and we would ask you not to hesitate, to write into the office for any information you may require as to the best and most profitable practice to be employed in any given case; the technical bearings of the material that you propose to employ, or any other matter relating to your business or the concrete industry in general, and it is our pleasure to either forward you the information by letter direct, or to cover the same in the columns of our journal for the information of the trade at large.

THERE never was a time in the history of this country when the inadequacy of the railroad system became so apparent as in 1906. There are thousands of manufacturing concerns whose balance sheets at the end of the year will show a largely curtailed profit by reason of the continual shortage of cars and motive power. The railroads have simply done their level best; every mile of rails has carried the highest percentage of tonnage ever recorded, and yet, more than double the business could have been done were cars and motive power provided to properly handle the same. Some operators have found the volume of their business curtailed fully twenty-five per cent in this way, and it merely means that the railroad organizations are not equal to the emergency and have not fully realized the extent of the expansion of business, or they would have made a better provision for it. It begins to look like the location of a factory with regard to railroad facilities alone is not the all in all, and the railroad magnates will have to be up and doing if they mean to hold their jobs with the business public.

THE Sand-Lime Brick Manufacturers will hold their annual convention in Chicago, December 5-6-7. There has been good money made this year in the sand-lime brick business and there will be "somethin' doin'" at the Chicago convention.

If it were possible to tabulate and compare the growth of the stone crushing business this past season with any previous year, it would be interesting, for it would show the most remarkable expansion that any industry has ever witnessed in the history of the world. Speaking from very wide observation, it is safe to say that fully three yards of stone have been crushed in 1906 for every one yard that was ever crushed in a previous year. There is only one drawback to the business and that is, the limitation of transportation. The transportation of crushed rock is impracticable today by the methods now in vogue. While crushing operations will continue to grow apace, as soon as the transportation problem is solved it will at once expand by the rule of geometrical progression.

THERE is an ever increasing demand for concrete structural engineers who know the business.

CONTRACTORS say that present cement quotations make them dizzy, and they can't tell where they are to get off.

WHEN you meet a dealer in builders' supplies these days, he will remind you of Foxy Quiller and his knowing wink.

If you don't make a profit in 1906, go look in the glass and you will observe a man who is engaged in the wrong business. You had better get busy in some other line.

WE haven't seen a fire-brick manufacturer in six months who did not bear the marks of prosperity. When the kilns are smoking and the mills are grinding, the fire-brick man has "his'n."

WITH the first flurries of snow and the heavy fall rains, the roofer is having his festive season. Have you seen his wagon crowding through the busy streets? It is a long road that has no turn and this is the roofer's harvest time.

THE sewer pipe man and the vitrified brick manufacturer have had a long run of prosperity, but neither can afford to keep out of the game of publicity in these days of new products to take the place of those that have dropped behind the times.

SOMETIMES it is not good policy for the manufacturer to contract for the sale of his output before his product is manufactured. It may look like it is worth more when you actually see it in its finished form. It's different in the good old summer time.

GYP-SUM plaster, or plaster of paris, is the rich man's luxury. It affords the opportunity for indulging the most elaborate artistic proclivities in the interior finish of elegant homes, as well as public buildings. There has been but one trouble with the gypsum producer this year, and that has been to have a supply ready when the man with the price comes along with his order.

THE steel manufacturers are beginning to awaken to the fact that re-inforcing steel, expanded metal and metal lathe are to be enormous features of the business in the future. None of these commodities requires the enormous investments that are found necessary in the production of heavy structural steel. Consequently, a large number of mills will find profitable employment in turning out these deservedly popular commodities.

POOR Richard used to tell about the high charge for tuition in the school of experience. There are some concrete contractors and engineers who will not have a lesson from any other school, although the price of complete handbooks upon this subject is exceedingly trivial. Every phase of the concrete industry, even chimneys and warehouses, have been covered in this way, and even young children in this free school are taught to read. Selah.

From Our Own Correspondents.

IN GREATER NEW YORK.

New York, November 17.—The American Concrete Association gave an interest entertainment to its members and friends on the evening of October 24 in the large concert hall, Madison Square Garden. Notwithstanding the inclement weather, rain having fallen up to the time of opening the hall was filled with an interested audience.

Ross Tucker, of Tucker & Vintar, made the opening address, which consisted of a general resume of the increase in the use of Portland cement. He referred to the first production of American Portland some twenty-five years ago when the output was about 48,000 barrels. He outlined the progress in the industry through the early nineties up to the present year in which the total consumption is estimated at 48,000,000 barrels. The largest proportional increase was in the closing years of the nineteenth century when engineers began to take up the subject which had previously been confined to cement handlers and had the encouragement of cement producers alone.

Mr. Tucker illustrated by means of stereopticon pictures the early application of cement in arch construction, showing the crown of the arch supported by brick work. Later it became evident that brick were superfluous, he said, and the arch was built entirely of cement with heavy (I) beam anchorages. But some advanced thinkers, prominent among whom was E. L. Ransome, figured that the bulk of metal was misplaced and wasted, so much of it being in one spot, and they adopted the system of distributing the same amount in rods throughout the mass. This was the beginning of the re-inforced cement idea, said Mr. Tucker.

Then, Mr. Tucker continued, tracing the development of the industry, the same active minds decided that the metal re-inforcement made the structure so self-sustaining that the arch plan with its necessary waste of space, could be entirely abandoned, and the same rigid effect could be secured by ordinary square piers or columns with right angled lateral work leading from them. When it had been thus successfully demonstrated that a re-inforced cement flooring with a twenty-foot span abutting at right angles into supporting pillars with the total elimination of the help of arches could support a load of 800 pound to the square foot, then the art of re-inforced cement building had got beyond its babyhood and had begun to grow with big jumps till it now has the first attention of the entire engineering profession all over the world.

When the appalling disaster occurred in San Francisco, the speaker continued, the government desiring to obtain correct scientific data as to the respective and comparative resistance of the building materials, deputed R. L. Humphreys to go there and make an examination as complete and exhaustive as he deemed necessary. Mr. Humphreys also went as the representative of the American Cement Association. It was peculiarly fitting that such an investigation should have been made under the auspices of the cement industry of America for examination proved that the cement construction withstood the shock very much better than any other form of building and it was here in San Francisco that re-inforced cement construction had its birthplace.

Twenty years ago, said Mr. Tucker, E. L. Ransome erected buildings according to this system and, though the method then was crude as compared with the present method and lacked the scientific formulas and improved processes used to-day, yet the buildings served their purpose and showed up well in the great earthquake of April 18. "From that day and that beginning," said Mr. Tucker, "the industry has gone on increasing in importance until it has reached the prominent place it holds to-day. The interest in it is

increasing every day, and from present indications the future is boundless." He then introduced Mr. Humphreys, who, he said, needed no introduction to an audience of cement manufacturers.

Mr. Humphreys Speaks.

Mr. Humphreys began by expressing his thanks for the attendance of so many to hear him and then entered at once into a description of his work in San Francisco using photographic views as illustrations. He spoke of the stupendous nature of the catastrophe and said that words were inadequate to give a fitting conception of the extent of the disaster. The shock demonstrated, he said, the superiority of the steel frame, and especially of the reinforced concrete building, over all other forms of construction. These structures stood out, in fact, generally above the ruins around them and in cases where they had been effected by the shock, their injury was far less than that of surrounding buildings not so constructed.

The consensus of opinion of those on the ground and best qualified to judge, continued Mr. Humphreys, was that steel frame and re-inforced concrete had demonstrated their unquestioned superiority, and these two systems of construction would largely have the call in the rebuilding of the city. Mr. Humphreys then took his audience far into the country with him and showed the effects of the quake on the land outside the city. Fields with fissures ten and twelve feet wide, highways cut in two and the sections moved a hundred feet apart, front yards and fences moved across the road, farm houses cut in half and the parts moved twenty feet away from one another, railroads with the beds in all sorts of curves and the tracks rolled up like snakes were some of the scenes illustrated. He gave some fine views of Stanford University and showed what the inward thrust of the beams had done to the outer shell of the grand arch and the wreck caused in the other buildings. In the city itself the pictures followed one another rapidly and among them were many showing peculiar effects on buildings of steel construction, indicating that the steel girders had struggled against the terrible force of the shock and in many cases had triumphed though sadly bent and twisted. In one case the shock had run up some beams buckling the side plating as it went along till it finally expended itself but leaving the pillars yet plumb. In another case the upper part of the building was moved over leaving it still resting on its lines of supporting pillars but pushed along for half their diameter. Pictures were shown of scenes around the Call Building, the City Hall and other prominent buildings.

There was so much of a general nature to be discussed in the lecture that Mr. Humphreys did not have time to touch upon the strictly technical side of the question. This feature, however, will be taken up by Mr. Humphreys when he makes his complete report to the government. But enough was said to make it claim that steel construction and re-inforced concrete acquitted themselves most successfully.

\$480,000 Printing House.

Plans were filed November 17 with the New York Building Department for a new eleven-story fire-proof printing house to be erected for Joseph J. Little, former Education Commissioner, at 425-435 East 24th street. The building is to have a frontage of 150 feet and a depth of eighty-nine feet with a facade of terra cotta trimmed with brick. The cost will be \$480,000. Townsend, Steinle and Haskell are the architects.

A bulletin issued by the Geological Survey on the "concentration of cement interest" declares that "setting aside as impracticable the question of trust and combinations based on monopoly of raw material, it can be said that there is noticeable a certain concentration of interest in the cement industry, and that this probably will become more marked year by year. The eighty-eight plants in 1905 are owned by seventy-eight companies, and several of these nominally independent companies are closely connected by ownership." The bulletin continues:

"The nature of the cement industry, however, renders it improbable that any combination or non-competitive arrangement can be carried to such a point as to result in a monopoly of the industry and permanently higher prices. Good raw materials are so widely distributed in the United States that there is hardly a county which could not produce Portland cement if prices were forced high enough. The only limitation now on the erection of cement plants is the fact that the great

cost makes the ventures prohibitive for the individual or small firm.

"Of the seventy-eight companies, fifteen produced more than two-thirds of the entire American Portland cement output. Seven of these showed an annual output of more than one million barrels each, and these seven together produced somewhat more than half of the entire output of the country. The five largest companies together produced about the same percentage of the American cement output that the United States Steel Corporation does of the American output of pig iron.

"The cement industry at present, therefore, is in a more concentrated condition than was the iron and steel industry at the date of formation of the steel corporation, but further concentration, to such a point as to bring about unfairly high prices, does not seem practicable."

Concluding, the bulletin gives the following figures relative to capitalization:

"Figures obtained unofficially from various sources would indicate that the total authorized capitalization of all the American Portland cement companies now in operation will fall between the limits of \$110,000,000.00 and \$125,000,000.00. This estimate takes no account of outstanding bond issues, but on the other hand, gives no credit for stock authorized but not issued, so that on the whole, it can be accepted as representing very fairly the total capitalization of the American Portland cement industry.

"This capitalization can not be considered excessive, in view of the fact that it would cost probably \$75,000,000.00 to \$85,000,000.00 to replace the properties and plants now in existence."

To meet the demand for shipping accommodations for Bronx industries the central Railroad of New Jersey has set aside about \$1,000,000.00 for the freight station it is to establish on the Bronx side of the Harlem River, east of Third Avenue. The railroad company is now handling about sixty carloads of Bronx freight daily at its temporary station at 136th Street. Work on the station is under way and it is expected it will be open for business before the close of the year. The buildings are to be of reinforced concrete, brick and stone will be used where necessary and for ornamental purposes. All the old building on the new site, which extends from Third to Lincoln Avenues, and from the River front to the Southern Boulevard, have been razed. The river in front of the railroad property is being dredged to a depth of 15 feet, and a bulkhead 540 feet in length is being constructed.

The property, which extends for that distance along the river front, has a frontage of 475 feet on Lincoln Avenue, 355 feet along the Southern Boulevard and 292 feet on Third Avenue. Outside the new bulkhead a slip and bridge for transfer floats is to be constructed parallel with the inside of the government pier line. Rails are to be laid for the accommodation of 110 cars. Near the Third Avenue end of the plot the railroad company intends to erect a freight house, in the interior of which will be a circular platform forty feet in width and 450 feet long. The building is to be of steel frame work, with corrugated metal sheeting, concrete floors and sides. The bulkhead will be constructed of concrete above low water line on a pile foundation.

Entrance to the freight house is to be at the junction of Third Avenue and Southern Boulevard, and the entrances for the delivery of freight will be from Lincoln Avenue. Fourteen tracks have been laid out in the yard, with driveways between each, so that shippers will experience no delay in loading or unloading freight. The local offices of the company will be established in the second story of the new freight house near Third Avenue.

New Concrete Garage Leased.

F. E. Malone has just leased for George C. Boldt, of the Waldorf-Astoria, to the American Locomotive Co., the new automobile building at the corner of Sixty-first Street and Broadway. The building occupies a most favorable location for the purpose and is absolutely fireproof, built of concrete and steel. It provides six floors and a basement of 13,500 square feet each, or nearly one-third of an acre per floor. The real estate transaction is said to involve over \$1,000,000.00 alone.

Plans have been filed for five four-story brick tenements on Sterling place, east of Troy Avenue, in the Borough of Brooklyn, to cost \$125,000.00.

The Portland Construction Co., of Morris Park, L. I., have just installed a Perfection power cement block machine at their factory, and are now making blocks under 100 pounds pressure. They have also put in a new stone crusher, and propose

henceforth to use crushed stone in all blocks. Their plant is open for inspection any day, and those interested will be well repaid by taking a trip out to their works. They are now in full operation and are prepared to deliver their product anywhere and in any quantities.

M. K. Sawyer, the general manager of the Perfection Block Machine Co., has opened an office in the Cadillac Hotel, Forty-third Street and Broadway, and from present indications it looks as though he is here to stay.

Work Progressing on the \$4,000,000.00 Terminal.

Commuters and property owners in New Jersey are watching with interest the progress being made on the terminal and tunnel of the Hudson and Manhattan Railroad, connecting Jersey City with New York at Church Street from Cortlandt to Fulton Streets. The tunnel is being bored across from the Jersey side. More than half the distance has been traversed, but the boring has been through hard clay. From now on, however, the workmen must cut through bed rock. It is not thought that this will cause any delay, as such excavating was contemplated and the company has at its command every modern appliance to expedite the work. The O'Rourke Construction Co., which is laying the foundation for the terminal at Dey and Church Streets, is pushing its men steadily. Huge caissons are being sunk 65 feet to bed rock and filled with concrete. Eight men work at the bottom of these caissons in an air pressure of three atmospheres. The foundation will be completed early next summer. The Fuller Construction Co. will then begin the erection of the terminal buildings, which have been designed by Clinton & Russell. They will be twin structures, about twenty stories high, occupying two block fronts. They will cost about \$4,000,000.00. They will cover an area of 62,000 square feet and inclose within their walls upward of 16,000,000 cubic feet. This enormous piece of construction will be completed, according to the present plans, in the spring of 1908, simultaneously with the opening for transit of the tunnel.

There was a slight increase in building operations in Queens Borough during the past two weeks. Plans for ninety-three new buildings were filed, to cost \$376,804.00. Among the more prominent new structures are two five-story brick tenements to be built by Thomas Crimmin in Long Island City, one at Thirteenth St. and the northwest corner of Crescent Street, to cost \$40,000.00 and the other adjoining the above on the north, to cost \$30,000.00.

The Silicia Block Works are putting up a model plant, under the Westerfield System, at Seward, N. J., where they expect to manufacture cement blocks. The prime movers in the enterprise are Hugh Moore, of Brooklyn, and Frank Lyman, of New York. E. A. Westerfield, of 39-41 Cortlandt Street, is the designer. The plant will be ready to operate in about ten days.

SYRACUSE, N. Y.

SYRACUSE, N. Y., November 17.—The continued fine weather has made it possible for building operations to continue late in the fall and contractors will work as long as they possibly can. A large amount of paving, building, sewer work, street car track work and sidewalk work is still being done before snow flies. Snow has held off this year much longer than it did last year as at this time a year ago there was a heavy snow on the ground.

The annual report of Superintendent Hoyt H. Freeman, of the Onondaga Salt Springs Reservation just completed shows that 1,817,113.35 bushels of salt were inspected during the fiscal year ending September 1, as compared with 1,654,448.18 inspected during the preceding year. Superintendent Freeman, in speaking about the increased salt business, said:

"The salt business in this section has been comparatively good during the past year, especially during the latter half of the year. This is due almost entirely to the favorable weather conditions. During the summer months the weather favored the solar salt business. The total receipts for the year from the fees for inspection amounted to \$18,171.15. The miscellaneous receipts, including office rent, were \$220.88, bringing the total receipts to \$18,392.03. The total receipts of the previous year were \$16,979.54."

The report of Superintendent Freeman shows that while the receipts last year were larger than for the preceding year the disbursements were smaller. The total expenditures as given in the report

are \$17,007.70 as compared with \$17,197.96 for 1905. The balance in the department for the year 1906 after the payment of all expenses, including salaries, is \$1,384.33. In 1905 it was \$218.42.

The Clemence Construction Co. has the contract for the construction of a steel and concrete plant for the Empire Foundry. The main building will be 100 by 140 feet and two stories high. There will also be two-story pattern storage warehouses.

At the annual meeting of the Split Rock Cable Co., which transports rock from Split Rock to the Solvay Process Co.'s plant, the following trustees were chosen: John L. King, R. G. Hazard, E. N. Trump, F. M. Power and O. V. Tracy. The trustees elected the following officers: John L. King, president; Frederick R. Hazard, treasurer; O. V. Tracy, secretary; E. N. Trump, general manager.

At the annual meeting of the stockholders of the Solvay Process Co., the following trustees were elected: William B. Cogswell, Frederick R. Hazard, R. G. Hazard, of Peacedale, R. I.; Edward N. Trump, Hendrick S. Holden, O. V. Tracy and J. M. Wing, of New York. The trustees elected the following officers: President, Frederick R. Hazard; vice president and managing director, Wm. B. Cogswell; vice president, R. G. Hazard, of Peacedale, R. I.; treasurer, O. V. Tracy; secretary, G. E. Francis; assistant treasurer, E. W. Corey; assistant secretary, L. Krumbaar; general counsel, John L. King.

E. B. Alvord & Co., of Jamesville, are working on the hills east of the trolley line in an endeavor to discover a gypsum bed. Gypsum abounds in this vicinity and this concern believes that it can find some new sources of production. E. B. Alvord & Co. are producers of the raw material and ship their gypsum to manufacturers of plaster in various parts of the United States. The company now operates at a point midway between Jamesville, Fayetteville and Manlius, which necessitates a haul across the country of three miles before the rock can be shipped.

Architect M. D. Makepeace has plans for the Odd Fellows hall at Skaneateles, which will be one story high, of brick and concrete block construction.

Brown, Curtis & Brown, furniture dealers, will erect a stable and shed in the rear of their store to cost \$25,000.00 according to the plans of Russell & King, architects.

Charles M. Warner will build an addition to the Peck-Warner building.

C. C. Bradley & Son will erect a foundry of steel and concrete construction to make iron castings for their own use. The building will be about 60 x 150 feet.

Nelson H. Freeman, of Gouverneur, a pioneer in the mining of talc, is dead. Mr. Freeman was born in 1844. In 1863 he went to California, remaining five years, after which he returned to a farm near Gouverneur. A few years after his return, talc was discovered on his farm. This he mined, the talc being the finest in the world.

BUFFALO, N. Y.

BUFFALO, N. Y., November 17.—The Gehres quarry of Buffalo, brought prominently into public notice at the time of the famous Burdick murder, because Mr. and Mrs. Arthur R. Pennell made a fatal plunge into the quarry in their auto, is to be opened up and worked on a scale not heretofore attempted. Papers have just been filed in the office of the county clerk, John H. Price, of Buffalo, which show that a transfer of land at the quarry has just been made whereby a switch can be run from the New York Central belt line tracks right into the quarry.

Details of the plans of the Great Lakes Portland Cement Co. show that the plant to be erected at that concern at Port Colborne, Ont., is to be most complete. The plans show that there will be some of the features of the proposed plant; 1,200 barrel cement plant, capable of extension to 4,000 barrels a day; clay storage building; crusher building, stone storage building, raw material and grinding building, kiln building, clinker building, cold storage building, cooler, machine shop, transformer house, offices and two cement storehouses, with a capacity of 150,000 barrels each. Galvanized iron, concrete and cement brick will be used in the construction. Sheds in connection with the plant will be located along the Welland Canal and will each hold eight cars, so that the work of loading to vessels can be carried on in all kinds of weather.

James Cockburn and John W. Cockburn, doing business under the name of Cockburn Bros. & Co.,

Buffalo, have filed a petition in bankruptcy in the United States Court in this city. The alleged bankrupts were concrete contractors in the Builders' Exchange, Buffalo. The total amount of their partnership debts is \$7,929.85, of which \$881.91 is due Fox & Holloway, of Buffalo, on an open account. Large creditors on notes are Beals & Co., \$2,046.92; J. G. Ross, \$1,492.64; Otto Milow, \$968.19 and Lee Holland & Co., \$1,409.28. The United Gypsum Co. is a judgment creditor for \$780.01. The assets of the bankrupts are scheduled at \$265.24, of which \$15.00 is in cash in the German-American Bank of Buffalo, and the rest due on accounts. No individual schedules were filed.

Will Build Concrete Malting Plant.

A big malting plant of fire proof concrete steel construction will be built in Buffalo at an early date by the contracting firm of James Stewart & Co., for the Perot Malting Co., of Philadelphia. The estimated cost of the building is \$250,000.00. The structure will be erected near the foot of Louisiana Street.

Architect S. A. Reynolds, of Olean, N. Y., has prepared plans for a cement block house to be built by A. Gaske, of Buffalo.

J. G. Danio, of Kenmore, N. Y., who has been manufacturing cement blocks with a machine of his own construction, has bought an improved machine and will go into the manufacture on a larger scale. He is the first person in Kenmore to take up this business.

Judge Hazel, in the Circuit Court, Buffalo, has handed down a decision in the case of the Wing & Boswick Co. vs. the United States Fidelity & Guaranty Trust Co. The action was to recover damages on a building erected by the National Concrete & Steel Co., and the defendants for J. D. Calkins. It was alleged that the National Concrete and Steel Co. engaged to erect a three-story building in the town of Corning, N. Y., for Calkins, and that the Fidelity and Trust Co. was on the steel company's bond. A storm damaged the building and the owner brought action against the contractors to recover damages for the time lost. Judge Hazel awarded a verdict of \$1,590.75.

With the Street Pavers.

Improvements of the pavement being made in East Avenue, Rochester, N. Y., will not be completed this fall, but will be resumed next spring. The Warner-Quinton Pavement Co., which has the contract, claims inability to get enough help. Part of the street which is not complete, will be graded temporarily for the winter and opened for traffic. The work of the new State road near Albion, N. Y., this fall will be confined to building the culverts and sluiceways along the way. Contractor Hacknell has let some sub-contracts for excavating and the drawing of stone. Much of the stone on the farms along the route will be utilized in this way.

The greatest improvement made in Depew, N. Y., in the past few months, was the completion of about five miles of cement walks, laid by the Depew Lands Co.

Commissioner of the Department of Work and City Engineer Snyder, both of Oswego, have been in Boston, Cambridge, Mass., and New York, to examine various kinds of pavements, concrete and block stone.

Asphalt paving, costing upward of \$100,000.00, will probably be laid at an early date in several streets in Hamilton, Ont. At a recent meeting of the board of public works City Engineer Barrow, of Hamilton, presented the aldermen of that city a comprehensive scheme he has had in contemplation for some time for the extension of the good roads. The asphalt dressing laid on King William Street and other streets adjoining King and James Streets, proved so successful that Mr. Barrow believed he was warranted in asking the common council to continue the work.

Oscar S. Heller, who founded the Binghamton Pulp Plaster Co., and the Cement Products Co., of that city, died recently. In both concerns he was treasurer and director. Mr. Heller was always a public spirited man, and in the early days of the Chamber of Commerce of that city, held the office as director for several years.

Add 104 Acres to Property.

MARTINSBURG, W. VA., November 16.—The Standard Stone and Lime Co. has purchased 104 acres of unimproved land along the B. & O. railroad northwest of Millville, and adjoining the property of the company. The price paid was \$30.00 per acre.

CHICAGO, ILL.

CHICAGO, ILL., November 18.—The past few weeks has seen the bottom drop out of the cement market and a fall in price of ten cents a barrel. There is little demand and cement salesmen are all coming in off the road. They say the decrease in sales in the small towns is as great as was the increased demand this summer. This has been a splendid season and all the cement manufacturers have a happy disposition, a glad hand and a smile for everyone. It is the greatest year in building material ever known. Prices have been good and the demand much in excess of the output. There is probably more cement in the stock rooms than there should be but the car shortage is the only thing responsible for that. There are plans for larger and better buildings for next year than there was this time last year. The outlook is the brightest ever known. Nearly all the mills represented here are making plans for additions to their plants during the winter and next season will see larger capacities and better equipment in the mills.

The Marquette Cement Manufacturing Co. has completed and has the new power house at its mill in operation. The company contemplates several changes in the mill this winter and will add two more rotaries and drying machinery.

The Chicago Portland Cement Co. has a picture of a very unique reinforced concrete building made of "Double A." It was built by a contractor in Madison, Wis., for his own use and combines a boat house as it is built on the shore of the lake and a garage. The launch is run in from the lake side and a runway to the second story from the drive allows him a place to keep his auto.

C. A. Whyland, president and general manager of the Elk Cement and Lime Co., says that they will make this winter several improvements in their mill and plant. At their quarry they have just completed and have in operation another No. 5 Gates crusher, making in all three. At their cement mill they will add two more rotary kilns, griffin mills, tube mills, dryers and other machinery. Their capacity, which is now 750 barrels a day will be increased to about 1,200 barrels. They are fortunate in being so near the lake as they can ship by water as well as by rail. They have just closed a contract for a piece of ground in Milwaukee, and will erect a store house there so they can better supply their trade in Wisconsin and Minnesota. The lime kilns burn about 500 barrels a day but the car shortage has seriously effected this end of their business.

One of the largest, if not the largest reinforced concrete building in Chicago, is now in course of construction. The building is a warehouse for Montgomery, Ward & Co., the great mail order house. It is located on Chicago avenue, having the river on one side and the C. M. & St. P. Railway on the other, giving excellent facilities for handling freight. The caissons are now being sunk and the work of construction will be pushed as rapidly as possible. The building is to be nine stories in height and is 250 feet by 900 feet. It is estimated that about 90,000 cubic yards of material will be used. The contractor is the Geo. A. Fuller Co., and the architect is Richard Schmidt. The building is to cost \$2,500,000.00.

Sand and gravel operators who have Chicago for a market have, like other lines of the building material trade, had no difficulty in disposing of their output. A shortage of cars prevails, though from some comes the report that they were little hampered in their shipments, especially those who supply the railroads with materials for ballast and concrete work. On some lines where the materials were needed by the railroads there seemed to be little difficulty in supplying enough cars. Crushed stone producers have been disposing of their screenings to contractors for concrete work. This, the sand and gravel operators say, worries them but little. They claim that while limestone may show in a test of concrete at the early stages of its setting after it has set for years gravel will show as a much superior material as limestone is liable to air slack. Screenings may be used for caisson work but will not be specified for retaining walls. Then again, say the sand and gravel people, the screenings that are now finding a market are the accumulation of years. The huge piles that one sees near a crusher stone quarry are fast disappearing and when they are gone there are not enough screenings produced to supply a demand as great as they now have so that

while they may be used it will never effect the sand or gravel market.

The Atwood Davis Co., whose sand and gravel pits at Bellot, Wis., are large producers for the Chicago market, will operate their plant all winter. They have here one of the best equipped and complete washing plants. As they will be unable to wash gravel during the winter they will put in a cylindrical screen for the work. While they have not had all the cars needed for the removal of their products Mr. Atwood said the railroad had kept them pretty well supplied at this pit. At their Whiting, Ind., plant they were not so fortunate. When they did have the cars they sometimes remained on the track for days at a time waiting to be hauled.

The Canal Improvement Co. has been formed by John M. Ewen to carry out the contract he has for removing and marketing the stone on the Drainage Canal. The company is preparing specifications for a complete crushing plant which they will shortly send out.

The Illinois Mason's Supply Association is sending out its first directory of building supply dealers of Illinois. Besides containing the list of dealers it contains some valuable information, both to dealer and wholesaler. The book will be sent to anyone making a request to the Secretary, E. W. Hagle, 315 Dearborn Street, Chicago. Plans for the first annual meeting are being made and it will be held early in February in conjunction with the meeting of the Illinois Lumber Dealers' Association.

The Hotchkiss Concrete Stone Co. is making arrangements to construct another plant near Chicago. The plant at Warrensville, Ill., has been pushed all year to supply the demand for concrete stone, the necessity of a nearer manufacturing plant to the Chicago trade.

ST. LOUIS, MO.

ST. LOUIS, Mo., November 16.—The recent elections, so far as they affect this city and the building trade, are regarded as a rebuke to the administration for its attitude towards the free bridge proposition, for the construction of which the people voted \$3,500,000.00. The mayor and his advisors consider that the movement was ill-advised and will be detrimental to the best interests of the city. They also allege that the cost will be nearer \$7,000,000.00 than \$3,500,000.00. The majority of the voters apparently disagree with this opinion because they turned down almost every candidate for re-election.

Work on the ten-story building for Butler Bros., occupying the entire block bounded by Seventeenth, Eighteenth, Olive and Locust Streets, is being pushed along in the usual brisk fashion of the James Black Masonry and Contracting Co. A large steam shovel and good supply of dump cars, propelled by electric power and operated over the street railroad, has made short work of what would have otherwise been a most tedious job of excavation in these days of scarcity of labor. In the northwest corner a quarry has been opened, from which enough stone is being removed to furnish all the crushed stone used in the building. The construction is to be of steel and reinforced concrete and is to be ready for occupancy by September 1, 1907.

In these busy days, when the air of our cities is being increasingly laden with soft coal smoke, the sulphurous fumes of which destroy almost everything it touches, the problem of finding a material for sides of buildings in places where brick is not suitable, becomes increasingly important. And what is true of siding is also the case but in a greater degree of roofs. Less than two years ago the Terminal Railroad Association of St. Louis erected a large coal chute in its yard, constructed of a steel frame enclosed and roofed with corrugated iron. For some months it has been apparent that the corrugated iron was rapidly going to pieces. This led the chief engineer, H. J. Pfeifer, to make careful investigation of the many materials offered for sale and it has been decided to use for the siding a corrugated sheathing, composed of Portland cement and asbestos fiber, reinforced with woven wire. The roof will consist of large tiles made of reinforced concrete. The siding is also made in the form of slate for roofing, while the roofing tiles are also made in the form of slabs for siding. It is an excellent test of two substitutes for corrugated iron and kindred materials, which will be watched with great interest by engineers and the owners of large buildings.

LOUISVILLE, KY.

LOUISVILLE, Ky., November 21.—The weather man is certainly doing his share toward helping the building lines in making the year 1906 a record breaker for the Falls City. While it is a little too late in the season to undertake any projects, or break ground for new construction, the open weather is permitting the finishing up of all concrete work and the various concerns are taking advantage of it.

The National Roofing and Supply Co., 140 Main Street, advise that in all their lines it has been the biggest year they have ever had. They are still working on the addition to the Louisville, Henderson & St. Louis railroad at Fourteenth and Market Streets, but report no new construction in the roofing line, their present contracts requiring their entire time and attention.

Fitch-Troxell Co. have finished their big concrete job at Portland, and while they have no new work, intend making blocks during the winter as they have orders in hand to take all they can make.

Mr. John Simon, president of the Louisville Pressed Stone Co., at Fifth and A Streets, is at present in Cincinnati, but the work on his handsome residence is closely approaching completion. A large artificial ice plant is to be put in the immediate vicinity, the construction of which will require an immense quantity of concrete blocks. Plans for this work, however, have not yet been completed.

The Western Cement Co., through Mr. C. A. Courtney, advise that they have had an exceptionally fine season with orders on hand for shipment while the open weather continues.

Mr. J. B. Campbell, of the Kentucky Wall Plaster Co., states that while there has been no big contract taken during the past month, the many small residences that are going up all around town keep the teams busy early and late in delivering plaster.

Both Mr. Walter Gasley and Mr. J. B. Oelschlaeger, of the National Concrete Construction Co., are very busy men these days. The three-story concrete building for the Louisville Lighting Co., is practically finished; work is being hurried on the Paul Jones building and their other work in the city is being hurried through before frost comes. This firm is now arranging to put in a considerable addition to the plant of the Ohio River Sand Co., for the facilitating of handling sand at this place. This work will start very shortly and will be continued through the winter.

Mr. J. M. Settle, of the Ohio River Sand Co., reports that with the orders he now has on hand for very nearly every local job of importance in the city, it has been impossible to take any additional orders. For this reason, out of town business in car lots has not been looked for.

Both Mr. Wheat and Mr. Meldrum, of the Utica Lime Co., advise that their lime and cement business has been exceptionally good. Of course the unprecedented demand for Portland cement has in a measure made itself felt in lime shipments, but this firm handles Atlas Portland as well as natural cement and expects a rush of business right up to January 1.

Mr. Neil Monks, as usual, is rushed with business, especially in the roofing line. They are doing a big job for the roof of a dock for the Louisville and Nashville railroad at Pensacola, Fla., using Warren Anchor brand roofing entirely. No new concrete work, outside of the finishing of the Clark Machine shops, at Shelby and Bergman Streets, is in hand, as Mr. Monks deems it unwise to make any heavy start on anything new at this late season of the year. Mr. Cliff Hall has returned from his wedding trip, and is now at his desk working in his usual tireless manner.

The old firm of J. B. Speed & Co. are keeping pace with the younger concerns, in the marketing of both their natural and Portland cements, which have been in large demand this season. The Portland cement plant which has a daily capacity of 600 barrels a day, will be enlarged to about double its capacity, and it is hoped to have the new addition in bearing for 1907, though the labor question, which is the hard nut to crack in this locality, will enter largely into this achievement.

This firm also handles Alsens German Portland cement, but with the production of American Portlands in nearly every State of the Union, it looks as if the day of the foreign Portland had passed, for interior cities at least.

MEMPHIS AND THE SOUTHWEST.

MEMPHIS, TENN., November 16.—All lines of cement, brick and artificial stone continue to have a good demand and everything points to activity throughout the winter. Large building projects are being planned, bond issues from various municipalities throughout the Southwest toward sewer work are being floated and work will go ahead during the best days of the winter. Prices are firm and Memphis is seeing a healthy trade situation.

The Miller Paving Co., of this city, workers in concrete and cement, have been awarded the contract by Chighizola, Hanker & Cairns, architects, for the foundation of the Paul and Douglass building, to be erected on Madison Street, near Fourth. Work will begin immediately.

Bids are being received for several concrete cottages to be erected to the American Bag Co. in South Memphis for its employees. The Selden-Breck Construction Co. has the contract for the erection of the main plant.

H. B. Marchbanks, a former broker of Kansas City, is putting up a plant for the manufacture of cement bricks from sand and gravel, on West Fourth Street, in Joplin, Mo. The plant will cost about \$15,000.00 and will be in operation within a couple of weeks.

E. E. Batchelor, Louisiana, Mo., has purchased a hollow cement block machine and will manufacture cement blocks. His plant is located at 423 Frankfort road.

A. T. Cooper will start in the business of manufacturing cement blocks at Cortland, Neb.

Dr. Nebraska Material Co., of Lincoln, Neb., is adding a complete line of sewer pipe, fire brick, fire clay and hydrated lime.

The excavating and grading for the Yoke Vitri-fied Brick Co.'s plant at Coffeyville, Kan., is complete and work on the foundations for the buildings is in progress.

The Inter-State Cement Co. will erect a large cement plant at Crane, Montgomery County, Kan. It will have a capacity of 3,500 barrels of cement a day.

The brick and cement plant of the Guthrie Mountain Portland and Cement Co., at Mapleton, Kan., will be in operation by the first of the year. The cement plant with its six kilns will employ about 200 men.

The Central Portland cement plant at Independence, Kan., is assured. This mill will be located about one mile beyond the proposed Skinner factory at Crane. It will be a 12 rotary mill, gravity system and will cost \$1,000,000.00. It has been financed by four Eastern capitalists and bids for construction are now being received. The company has secured gas in the Indian Territory which will be piped to the plant.

The Salina Cement Stone Co., of Salina, Kan., has added some new machines to its factory. The firm is manufacturing cement brick for chimneys and foundations and also porch piles. J. C. Henry is manager.

The Central Portland Cement Co., of Kansas City, Mo., is operating a plant located between Elk City and Independence in Montgomery County.

The Blue Rapids Gypsum Co., of Blue Rapids, Kan., has just completed a new plaster mill. The officers of the company are: Capt. Perry Hutchison, president; E. R. Fulton, treasurer; Hugh Hohn, secretary; Frank W. Hutchison, general manager; G. A. Johnson, of Blue Rapids; A. J. Piper, of Irving; W. W. Redmond, Perry Hutchison and E. R. Fulton, of Marysville, directors.

The Mistletoe Concrete Co., of Oklahoma City, and Fort Worth has been incorporated with a capital stock of \$30,000.00 by J. A. Crow and C. M. Crossland, of Fort Worth, and J. W. Daniel, of Oklahoma City.

Will Erect Another Kiln.

RAVENA, N. Y., November 17.—The Ravena Lime Co. is rushed with orders and is shipping lime away as fast as teams can be procured to haul it. The company expects to erect another kiln soon.

The Keystone Lime Co., of Pelham, Ala., is moving about 700 barrels of lime a day.

NASHVILLE AND THE SOUTHEAST.

NASHVILLE, TENN., November 16.—The Rock City paving, cement and granite brick concerns are getting their share of the business. New companies are being chartered here for operating at different points in the Southeast almost daily and there appears to be a future of great activity.

The Southern Bitulithic Co., of Nashville, secured a contract recently from the city of Knoxville for the paving of five districts there at a cost of \$119,288.03. At the same time a contract was awarded the Southern Paving and Construction Co., of Chattanooga and Knoxville, for nine districts at a price of \$148,058.16.

The Dixie Portland Cement Co. has been organized and work will immediately begin on the erection of a new plant near South Pittsburg, Tenn., which will be one of the largest Portland cement plants in the country. The company has a capitalization of \$2,700,000.00 and has been organized by George E. Nicholson, of Iola, Kan., who, with his associates, controls four other Portland cement concerns, three in Kansas and one in Iowa. The five plants will have an aggregate output of 15,000 barrels a day. The contract for the erection of the plant has been let to the Hunt engineering Co., of Cincinnati. The Pittsburg plant will have an output of 2,500 barrels a day. The company has bought property upon which the plant will be erected and has purchased land having an inexhaustible supply of limestone and shale.

The Newsom Crushed Stone and Quarry Co., of Nashville, has completed a two-story, nine-room concrete block house for Dr. J. B. Hill, and a two-story eight-room residence in Nashville for William Leftwich.

Another new manufacturing industry has been launched at Bristol, Tenn. This is the Luke Lowe Block Machine Co., incorporated, with a capital stock of \$30,000.00. Organization was perfected by the election of the following officers: E. K. Bachman, president; H. F. Henderson, vice president; W. J. Bachman, secretary and treasurer; and Luke T. Lowe, general manager. The company will manufacture a concrete block manufacturing and mixing machine, upon which Luke T. Lowe, of Bristol, has just been granted letters patent.

The Guaranty Wood Fiber Plaster Co., of Chattanooga, commenced operations this month at Chattanooga, Tenn. The company is located at 320 Carter Street. S. A. Bright is secretary and treasurer of the company.

The Hercules Paving Co., of Mobile, Ala., was recently organized with a capital stock of \$15,000.00. The company has obtained from the inventor a new process for street paving whereby the surface material removed from the streets to obtain the grade can be used for the permanent surface and rendered as hard as rock. The officers and directors of the company are: Herman Ruffl, president; Andrew Strauss, secretary and treasurer; Thomas J. Ford, vice president; P. B. Dorlon, Herman Ruffl, T. J. Ford, John Craft, Frank Koppersmith, George J. Sullivan and S. S. Brandon, directors.

NEW ORLEANS.

NEW ORLEANS, LA., November 16.—Building operations here continue active and one of the most important materials used in the construction work is concrete.

The New Orleans Terminal Co. is planning to build a second ship slip, which will be completed in the fall or winter of next year. The slip will extend 1,700 feet in and will be 300 feet wide. It will be dredged to 30 feet at low water. A concrete wall 24 feet high, 12 feet wide at the base and four feet wide at the top will keep the water in bounds. Tons of cement, sand and gravel will be used in its construction and the cost will reach into the millions.

James Stewart & Co. have a big steel and concrete job on hand in the erection of the Maison Blanche department store. Bonds to the amount of \$1,500,000.00 have been issued to pay for the construction of the building, which will be fifteen stories high and of concrete, steel, brick and terra cotta. The foundation work has already been started. The building will have a frontage of 161 feet on Canal street and 213 feet on Dauphine street. A wing on Iberville street will have a frontage of 82 feet.

An interesting test of the resistance of a concrete slab was made a few days ago by A. E. Krause, civil engineer in charge of the construction of the American Sugar Refinery's plant. A concrete slab ten

feet long by four feet wide from center to center of beams and four inches thick re-inforced with No. 10 gauge 3 inch mesh expanded metal, was subjected to a severe test to determine its adaptability to the average uses of sugar refinery buildings. The concrete was composed of cement, sand and cinders mixed in 1-2-5 proportion and was allowed to stand for thirty days. The slab was loaded inside the sheering points, that is between the haunches of the arch, a space measuring two feet, eight inches, making a surface of twenty-six feet seven inches for the entire loaded portion of the slab. Weight of 70,000 pounds was then applied or 2,632 pounds a square foot. The block not only stood the strain but its wonderful resistance was regarded as proving beyond a doubt the adaptability of reinforced concrete floor construction for the purpose for which it was intended in this instance with a larger factor of safety to meet any possible contingency. The concrete slab was made by S. A. Calongne, of the firm of Calongne & Sargent, fire-proof contractors, of New Orleans.

SAN FRANCISCO.

SAN FRANCISCO, CAL., November 4.—Reinforced concrete and cement work is on the increase here, and a considerable percentage of the high class buildings under way and projected are of steel frame with reinforced concrete curtain walls. Many concrete foundations are being put in with all possible haste to avoid delays in the construction of the superstructures from the rains which are to be expected shortly.

Good progress is being made on the concrete foundation of the new five-story custom house, costing \$1,500,000.00, and occupying half a block at the corner of Washington and Battery Streets. The foundation wall is more than eight feet in width on the Washington Street front. On the lower floor the pipes and electric conduits will be concealed in a layer of concrete one foot in thickness. Labor is not very plentiful and wages are high for concrete workers, finishers and helpers.

The receipts of foreign cement at this port during the month of October were 151,354 barrels. During the first week of November more than 47,000 barrels arrived, including a full cargo of cement from Antwerp, brought by the overdue ship, Leyland Bros., which was damaged by severe storms. A local authority on cement advises holders of good cement to hold it as an upward movement is expected soon, notwithstanding the great quantities of foreign cement that have arrived here since last spring. The importations have aggregated perhaps 650,000 barrels this season, and nearly 350,000 barrels are still on hand. However, the period of heavier construction is beginning. Many large foundations are going in and some large reinforced concrete structures are making considerable headway at last. Wholesale prices of foreign cement on the wharf range from \$2.70 to \$3.25, according to quality. It is hard to get handling done promptly.

The Riverside Portland Cement Co., composed of San Francisco, Oakland and Southern California capitalists, which own valuable lands not far from Riverside, Cal., has perfected organization and is now in the market for machinery for a modern cement mill of large capacity.

The Northwestern Portland Cement Co., at a recent meeting of its stockholders, authorized the incurring of a bonded indebtedness of \$2,000,000.00 in forty-year 9 per cent bonds. The proceeds will go for the acquiring of lands and the construction of equipment for a cement mill. The capital stock of the company is \$5,000,000.00, fully subscribed.

The San Juan Portland Cement Co., which has been perfecting its final arrangements in the East since the San Francisco fire, has ordered machinery and will soon have its plant near San Juan, Cal., under construction. The plant will cost more than \$1,000,000.00, according to the estimates. It will take nearly a year to build the mill.

William Starbuck is receiving bids for a two-story reinforced concrete building which is to be erected in Fullerton, Cal., at an estimated cost of \$30,000.00. It will be used for business purposes.

The Arcade Realty Co. has been granted a building permit in Oakland, Cal., for the erection of a four-story reinforced concrete hotel building at the corner of Grove Street and San Pablo Avenue. The estimated cost is \$109,200.00.

Labor War at Napa Junction.

The Standard Portland Cement Co.'s plant at Napa Junction, Cal., is still in operation with a somewhat reduced force of non-union men. A high

fence has been erected about the grounds and guards prevent any one from going through the gates without a pass. The labor council at Vallejo, Cal., has issued an appeal to the various labor unions to refuse to handle the products of this company's cement mills. The men struck for an increase from 13 to 20 cents an hour and the reduction of the day's work to ten hours.

W. J. Dingee, one of the principal stockholders of the Standard Portland Cement Co., is about to remove to New York to reside, having purchased an elegant home there. The County Commissioners of Alameda County have awarded Thomas B. Russell a contract to construct a concrete bulkhead on San Lorenzo creek in Eden township, for \$750.00.

The Santa Cruz, Portland Cement Co. has been bending every energy toward completing its 6,000-barrel cement plant at San Vicente, Cal., in time to supply cement this year, but delays in the delivery of machinery ordered in the East will make that impossible, and it will probably be eight months before the product of the new cement mill will be on the market. The new mill will probably be one of the best equipped in the United States and it will have good shipping facilities.

The Sierra Portland Cement Co. now occupies offices at 832 Monadnock Building, San Francisco.

The E. B. & A. L. Stone Co., of Oakland, Cal., has been given a contract by the Western Pacific Railway Co. for the manufacture of all the cement blocks to be used in the construction of its bridges. This is an immense contract and will keep the company busy for the next two years.

The Douglas Cast Stone Co., of Douglas, Ariz., has changed its name to the Arizona Gypsum Plaster Co. It will hereafter manufacture, besides cast stone building blocks, gypsum plaster.

San Francisco Building.

During the month of October there was in San Francisco a further increase in the amount of new permanent construction work undertaken. During that month there were 628 such building permits issued authorizing work to the value of \$5,365,000.00, while during the month preceding only 525 permits for permanent new buildings at a cost of \$4,263,000.00 were issued. Of the building permits issued during the month just closed, 128 were for stone, concrete and brick buildings to be erected at an estimated cost of \$2,902,000.00 as compared with 113 permits for work, estimated to cost \$1,673,000.00 during the previous month. The new work contains an unusually large amount of concrete specifications.

A twelve-story steel and stone building of Class A type will be erected by the Metropolis Trust and Savings Bank Co., at a cost of \$450,000.00 on the site of the Grand Hotel, at the corner of Market and New Montgomery Streets. This property, with a frontage of fifty-five feet on Market Street, and ninety-one and a half feet on New Montgomery Street, was purchased from the Sharon estate for \$425,000.00 or \$85.00 a square foot. This indicates that San Francisco real estate in the center of the burned district has increased in value rather than depreciated. The bank offices will occupy the entire ground floor and safety deposit vaults will be installed in the basements. The remaining eleven floors will be fitted up for offices. This building, which will have concrete foundations, will be opposite the Palace hotel, which is being torn down to make way for a ten-story hotel building.

The big coffee and spice plant of A. Schilling & Co. is being rapidly rebuilt. The new main structure is being substantially constructed of reinforced concrete, with red brick exterior. C. F. Wheelan is the construction engineer. The reinforcing fabric used is manufactured by the American Wire Fencing Co., represented in San Francisco by the Pacific Concrete Machinery Co.

Cotton Bros. & Co. have taken a contract amounting to \$33,972.00 for the erection of a one-story steel and concrete building at the southwest corner of Clay and Front Streets, for Sydney R. Marvin.

The Woodruff Co., construction engineers, are making good headway on the seven-story reinforced concrete office building, which is being erected at the corner of Pine and Leidesdorf Streets. The wall frames have been placed and the concrete poured in for the second story. Electric wires have been strung and ample light provided, so that the work of mixing and pouring concrete can go on night and day until the completion of the structure.

CONCRETE IN SAN FRANCISCO.

What the Contractors and Architects Are Doing and How They Are Doing It.

San Francisco, once known as the Palace City, and probably the most remarkable city in the United States, was practically destroyed in the twinkling of an eye, and while the world has been shocked by great catastrophes this was the supreme effort and the master stroke of the unknown. But in reviewing our history we find that such things of more or less magnitude have happened and no doubt will happen at different intervals in all time to come, again referring to history we find that great things have been discovered and brought to light as a direct result from wars, earthquakes, fires, volcanoes, etc.

Engineers and architects have spent years experimenting, testing and writing articles on city construction and the erection of large buildings; and great things have been accomplished and in many ways tried and have shown resistance to the ordinary fire. But when a city has been built on all the different theories and from all the different fire-proof and quake-proof materials, in the most scientific way they are all the best until tested by the elements, when the real virtues and



RUINS OF SAN FRANCISCO CITY HALL.

faults are brought to light. The San Francisco conflagration and earthquake did all these things and more. It opened up channels which were never considered before and started an investigation which bids fair to revolutionize the construction of large buildings and the building world in general.

Buildings which were constructed in the past from a theoretical standpoint have been tested both by quake and fire and their virtues and faults brought to the surface, and thoroughly discussed and criticized. Immediately after the smoke had cleared away, an organization was formed including the most intelligent architects and engineers of the West known as the Structural Association of San Francisco. The scope of the association's labors deals with the investigation and discussion of earthquake and fire phenomena and the formation of conclusions as to the manner in which the best type of building construction should be modified to conform to the conditions observed.

There have been features enough about the various structures that, if assembled in one building, would have made an ideal building and there is no reason why all the good features of these many buildings can not be assembled and used in the future in the construction of large buildings.

Unfortunately there is bound to be in San Francisco a repetition of the class of construction they have had heretofore. Architects are bound to be hampered by financial consideration on the part of their clients and the client who has money is liable to get a third class building and pay for a class A, as a result of the "get rich quick contractor."

A number of the buildings which were totally destroyed by the earthquake and fire had no license or excuse for standing at all, and this condition of affairs is not confined to San Francisco alone. These conditions will exist as long as there is so much graft among city officials.

Greater San Francisco will probably be built to a certain extent upon the scale as before. But the larger buildings will be erected on the most substantial fire and quake-proof plans known to the engineer and architect. A good example of the conservative manner in which the architects are specifying can be found at the corner of Battery and Filbert streets. The foundation is solid concrete, and the superstructure of re-inforced concrete. The building proper is only one story high, along the north and south sides the building is two stories high, and all modern features in fire-proof construction is incorporated in the building.

The new Bullock & Jones building, at the southwest corner of Post and Kearney streets has a concrete foundation and re-inforced concrete curtain walls. Both street fronts will be faced with cream terra cotta.

An examination of the buildings in the burnt district shows clearly the advantages of proper fire-proofing. Not a steel frame building in the path of the flames, not so protected, is standing to-day, while there are but few whose frame work was protected that are not in a fair state of preservation or at least in such a condition that they can be repaired.

Of the various kinds of fire-proofing that had a chance to show their qualities in the recent quake and fire, hollow tile and re-inforced concrete are the only ones that proved at all successful. The hollow tile proved successful in some instances, but the great trouble with hollow tile fire-proofing was that the mortar which held the tiling together was in many cases disintegrated by the intense heat, losing its cohesive qualities and falling out in small pieces allowing the tiling to fall and thus expose a section of the frame to the heat. The steel then became over-heated and was unable to support the weight it was intended to carry. It buckled, allowing the floor to sag and the floor above to sink and so through the giving away of a few beams in the lower floors the whole building or a large portion of it was ruined. The earthquake is not known to have damaged the fire-proofing of any of the large buildings but the use of dynamite did in many cases materially weaken it. This was clearly shown in the Grant building, at Market and Seventh streets. After the fire had completely gutted the building, the hollow tile fire-proofing was seen to have done its work well and the steel frame was uninjured. A day or so later a wall was blown up across the street and so heavy was the jar that the tile fire-proofing collapsed and in many cases exposed the steel work on an entire floor.

Re-inforced concrete has a better record to boast of; notwithstanding the numerous articles written by narrow-minded and inconsistent architects and others who have an ax to grind in their



FLANNERY BUILDING, MARKET, GEARY AND KEARNY STS., FIRST CLASS A STEEL AND REINFORCED CONCRETE BUILDING IN SAN FRANCISCO.

own particular line and are afraid that if the real virtues of concrete and re-inforced concrete are known it will cut the demand for the commodities which they are selling or manufacturing.

Do not misunderstand me; the majority of architects are intelligent, broad-minded men and are looking for the best, irrespective of the feelings that are created among a certain class.

Not only did re-inforced concrete withstand the earthquake, but also the jar from the use of explosives. All of the five large buildings occupied soon after the earthquake were fire-proofed with re-inforced concrete. These buildings were the California Casket Co.'s building and the Atlas building both on Mission street, the Kohl building on Montgomery street, the Telephone building on Bush street, and the Kamm building on Market street. The rear of the latter was injured by the collapse of the brick work which destroyed the concrete, but the front passed the ordeal safely. The only places where the concrete was damaged was in places where it was not of the proper thickness, and wherever it is broken, the trouble can be traced to the demolishing of the frame work by the giving way of something not properly protected.

Therefore, if the entire columns, girders or beams had been solid concrete there would have been nothing to give way and ruin the concrete, but the building would have stood intact.

There are no means of calculating the stresses in a structure due to an earthquake, but judging from the behavior of some of the buildings, and the manner in which the structures which were designed for a high wind pressure stood the test that buildings of six stories or higher should withstand a wind pressure of thirty pounds per square foot on its superficial area.

This question of wind bracing is an important one, and it has been proven that concrete is the best material for the purpose. As portal and knee bracing is not necessary from the fact if the building be properly made and each floor connected while the concrete is in a slush form, what is the result? The building is one solid piece and no chance for weaving is possible.

The buildings that are being erected in San Francisco to-day are more or less concrete, some being solid concrete and others re-inforced, and even the steel structures have concrete floors with a few exceptions and the result will be that in a few years concrete will be the predominating building material. Why? Because it is standing all tests and proving itself to be the most practical and cheapest material obtainable.

But this does not end the usefulness of concrete for building purposes as concrete blocks have proven themselves to be a permanent fixture for the building of dwellings, factories, walls, etc., in San Francisco and the surrounding country, as they stood the shock better than brick, frame, or rock, yet some critics account for these facts by saying that only low structures were made of concrete blocks and they would have met the same fate had they been higher. In answering this question please examine the illustration pictured in this issue. This picture shows the relative effect of the earthquake upon two adjoining buildings in the town of Windsor, Cal., Sonoma county. The Masonic Hall of brick construction, the front of which is entirely ruined, and the Odd Fellows' building 45 feet front by 108 feet deep made of 10 inch hollow blocks by the Sonoma Stone Construction Co., of Santa Rosa, which was so lightly injured that it was perfectly repaired at an expense of fifty dollars. The party wall between these two buildings, 108 feet long and thirty-eight feet high is of hollow concrete blocks, and it suffered by not so much as a single crack. The only hollow block building in the town of Cloverdale, Cal., is reported to have gone through the earthquake without hurt, while nearly every brick building in the town was damaged.

Someone asks the question: "Why is it that I have seen block houses that were very unsatisfactory to the owner and were not water proof?" Because the man that made those blocks was dishonest and was delivering an article which was not right or just. A block can be made of a mixture of four sand and one cement or two-fifths gravel or crushed rock and two-fifths sand and one-fifth cement and use a rich cement mortar of about one and one-half to one and your walls become one solid rock and all complaints will disappear.

All the lumber that goes into a building to-day is graded into several different classes, the smooth, straight grained lumber is considered the best



INTERIOR OF BULLOCK-JONES BUILDING, SAN FRANCISCO.

and the balance is culled and graded until the knotty boards are practically worthless. Why not grade concrete blocks and put the perfect blocks made of proper mixture in class A, and the poorer and knotty ones in their own class and the trouble and faults found with concrete blocks will disappear. This is the only drawback that concrete has to-day. The people of San Francisco have discovered this fact and in most cases the concrete work being done there to-day is of a good quality and the day is not far distant when this feeling and knowledge will become general and when that time comes concrete will pass from infancy to manhood even though \$200,000,000 worth of property was destroyed and some 1,500 lives lost before the awakening came.

Building Stone in Nebraska.

Nebraska has six large quarries and crushers and between 200 and 300 local-use quarries. Stone is produced in most counties but most generally in the eastern part of the State. The quality of the stone, though not of the best, is such as to commend its use in the manufacture of concretes, foundation materials, riprap, sugar stone and retaining walls. The limestone in the vicinity of Wymore contains large quantities of flint and is extensively worked and crushed for ballast. A greenish quartzite in Harlan County is suitable for use in concrete piers but can not be found in large enough quantities to insure extensive working. It outcrops in Knox, Boyd, Holt, Harlan and Franklin Counties, where it is quite generally called a granite.

A few thick ledges of limestone outcropping in the southeastern part of the State give promise of utility in the near future. The National Stone Co. is doing a big business two miles east of Louisville, producing crushed stone ballast and foundation material. The Johnson quarry, near Johnson, produces large quantities of foundation material. It is a rice grained rock. The foundations of most of the university buildings are from this rock.

In the vicinity of Hebron, a thin-bedded green limestone is quarried and used for walks, foundations and trimmings.—Lincoln, Neb., Star.

Good Stone for Road Building.

ESCANABA, MICH., November 17.—That the dolomite stone taken from the Bichler quarries here is of excellent quality for road building, is the decision rendered by officials of the United States Department of Agriculture, to whom samples of the stone were submitted for analysis. In all its qualities the stone is found to be above the average. This stone is said to have good cementing value, is of average toughness and hardness and slightly above the average in resistance to wear.

Will Supply Cement Factory.

PETOSKEY, MICH., November 17.—The Petoskey Stone and Lime Co. has closed a contract for delivering several carloads of crushed stone daily to a large cement factory. This greatly increases their already large business.

Quarries.

The National Quarry Owners' Association

Meets Semi-Annually.

D. McL. McKay, Chicago, Ill. President.
Chas. A. Pfeiffer, St. Joseph, Mo. First Vice President.
E. T. Faucher, Albion, N. Y. Second Vice President.
Sol. M. Wolf, Bellevue, Ohio. Third Vice President.
C. H. Delebaugh, Louisville, Ky. Secretary-Treasurer.

Official Organ, ROCK PRODUCTS.

Will Use Sixty Carloads.

WHEELING, W. VA., November 17.—The Wheeling Terminal has started work in the construction of the new county road which it will build under and along its tracks on Martin's Ferry, and the work will be rushed to completion. About sixty carloads of crushed limestone from Pennsylvania will be placed on the road.

Cotton Mills to Crush Rock.

ROCKY MOUNT, N. C., November 17.—The Rocky Mount cotton mills have bought a rock crusher for crushing rock for the river and mill improvements and, it is reported, will sell crushed rock to the town to macadamize the streets.

Railway Company Buys Quarry.

RACINE, WIS., November 17.—The Chicago and Milwaukee Electric Railway Co. has bought the Horlick lime and stone quarry property, located at the Rapids, composed of fifty acres, together with the machinery. The consideration is said to have been \$45,000.00. The railway company will crush all stone there for their new line between Chicago and Milwaukee.

Suit to Have Quarry Sold.

KOKOMO, IND., November 17.—Suit to foreclose a mortgage on Peter Grace's stone crusher and quarry here, has been filed by Levi A. Murphy, whose claim is said to amount to \$2,000.00. H. H. Stewart, J. W. Wilson, Robert Leavitt and Burnett and Caroline Yearling, former owners of the plant, are also made defendants. The petition asks that the quarry be sold.

New Quarry in Illinois.

SOUTH ELGIN, ILL., November 17.—W. V. Panten has just located a new quarry at this place. He will get out stone for building as well as crushed stone. He will use compressed air for drill, electric power for crushing and has water power within easy reach.

Quarry for Barge Canal Work.

PLATTSBURG, N. Y., November 17.—Work preparatory for the barge canal extension from Fort Ann to Whitehall has been started. The Delaware & Hudson Railroad Co. is extending a branch switch from the Fort Ann Depot to the foot of Curtis Hill where stone will be quarried and crushed for use on all parts of the canal between Fort Edward and Whitehall.

Town Will Buy Crusher.

SCRIBA, N. Y., November 17.—Citizens of Scriba decided at an election by majority of 196 to purchase a steam roller and crusher for use on streets.

The New England Adamant Co.'s plaster quarry near Hopewell Hill, New Brunswick, has been closed down for the winter.

The Indianapolis Mortar and Fuel Co. anticipates the erection of a hard wall plaster mill and desires to purchase equipment. A. E. Bradshaw is president, Albert Goepper, vice president and Charles Pigman, secretary.

BIG CHICAGO CRUSHING PLANT.**Dolese & Shepherd Co. Operates Enormous Quarry at Hawthorne and Is Big Factor in Industry.**

CHICAGO, ILL., November 18.—Although this city stands upon a sandy prairie and right at the brink of the lake, it is a long way to bed rock where the foundations for the ponderous buildings, which have gained for Chicago the name and fame of the City of Skyscrapers, are begun.

A few miles back from the water front, at no great distance from the surface, is a fine stratum of magnesian limestone and at several places quarries have been opened which have progressed for a number of years along the lines of such operations in other great cities. In recent years, the enormous demand for crushed stone for putting in concrete foundations has increased the demand a thousandfold, and the crushing propositions which have existed for years, crushing out a job order of so many yards and then closing down again, have grown into immense institutions running every day in the year, and representing in their equipment millions of dollars investment. No better type of the Chicago crushing operation could be selected than the great plant at Hawthorne, operated by the Dolese & Shepherd Co., whose general offices are located in the Women's Temple at Adams and La Salle Streets.

A good general view of the crushing plants at Hawthorne is given in the accompanying illustration. It is more than a mile around the quarry opening. The stripping to get down to limestone was at no place greater than four feet of earth, while the hog backs of limestone protruded above the soil in almost the entire area, but it was so long ago that this was an item of expense that it is now forgotten, the quarry being something like 200 feet deep, and still working in solid, clean magnesian limestone.

It has been the practice to take out floors or ledges about thirty feet in the perpendicular by blasting, and continuing, bite after bite, back into the ledge until the limits of the quarry opening are reached. Many hundreds of feet of steel tracks are laid on the bottom or floor of the quarry, with convenient turn-tables to divert the cars carrying stone to the inclines which lead up to the crusher floor. There are such a number of cars provided, and such a force of hands employed, that almost continually there is a loaded car going up and an empty car coming down, upon both of the inclines—for the plant consists of two identical units, built by the Allis-Chalmers Co., several years ago, employing two sizes of their Gates' crushers in each unit, with the usual elevating and conveying devices, as well as the Reliance revolving screens for separating the product of the crusher into the various sizes that are furnished to the trade.

Here, as elsewhere, the great demand is for fine screenings, and even with the enormous capacity that this double unit plant sends in to the bins every day, it is impossible to keep up with the call for crushed rock, especially of the finer sizes. As usual, beneath the bin, arrangement is made

for delivering the crushed rock direct to the cars by gravity chutes from the bins, and besides this, there are a series of cutes provided for loading the crushed rock into wagons. Dolese & Shepherd Co. operates more than a hundred teams hauling crushed rock from the Hawthorne plant to customers that can be reached in this way. While the trackage beneath the bins will accommodate from ten to twelve cars at a time and these cars can be loaded in less than one hour. The company owns a large number of private cars, because the volume of their shipments is so large that the railroad equipment, even at such a terminal as Chicago, is not in a position to take care of their requirements.

In connection with the Dolese & Shepherd Co.'s quarry operation at Hawthorne, they are also manufacturers of lime upon a large scale, operating ten kilns grouped into one plant, using sawdust and horse manure for fuel, which amounts to a wood fire. In this way they produce a pure white dolomite lime of high character which is popular with the local dealers and consumers. Approaching completion is a model hydrating plant, which is being constructed by the Kreitzer Co., of Seventeenth and Western Avenue, Chicago, a detailed description of which will be contained in our issue of December 22. In this the Dolese & Shepherd Co. exhibits its progressiveness, this being the first plant for the hydrating of lime erected in Chicago.

The same company operates a number of crushing plants at other points; in short, is an enormous factor in the material business at the world's greatest building center.

Direct vs. Sag Stress.

The American Wire Rope News for October, a quarterly publication of the American Steel and Wire Co., of Chicago, has a short article of interest to quarrymen on "Direct vs. Sag Stress," in the use of cable wire rope. It relates the experience of an inexperienced quarryman thus: "A cableway was constructed across a river, consisting of a single five-eighths diameter crucible cast steel rope. The actual distance between the suspending points was 300 feet. These points of suspension consisted of the crotches of trees, and after the rope had passed through them, it was carried about forty feet beyond and stayed to the roots of other trees. It was figured that this rope, as suspended, was of ample strength to sustain a load of 8,000 pounds at center of the span, because it was known that it would withstand a direct pull of 8,000 pounds with safety. This method of figuring is common with those, whose experience with wire rope is not large, and usually results in disaster. Such a calculation would be correct if the sag of the rope was equal to about one-eighth of the span. But when the rope was hung taut, with comparatively sharp angles at either end between the trees and the ground staying, the figures should have been increased over four times to maintain a reasonable factor. Upon the first trial the rope broke about half way between the trees and the ground stay, there being at that time a load of 8,900 pounds in the middle of the span."

BUSY CRUSHED STONE PLANT.**O'Laughlin Mill at Bellwood, Ill., Unable to Keep Its Bins Filled.**

BELLWOOD, ILL., November 15.—The crushed stone plant of Jas. & A. C. O'Laughlin here presents a busy scene to the visitor. This company operates this quarry and a crushed stone plant and lime kilns at Waukesha, Wis., as well, and does a large business in building materials. The Bellwood quarry is on a ledge of stone which at this place can only be used for crushing purposes. It extends from Elmhurst, Ill., through LaGrange, where there are several large crushing plants, down through the Joliet district, where in some places it forms in strata suitable for building and curbing construction. The stone at Bellwood is within a few inches of the surface so that very little stripping is necessary when the opening of the quarry is extended. The O'Laughlin Co. has a tract of land consisting of forty acres. Two acres of it comprise the quarry. The opening has attained a depth of eighty feet. The crushing plant on the edge of the quarry contains three crushers; one No. 6 McCully, and one each No. 5 and No. 3 Gates. The stone is hoisted to the crusher building on the track which is over the crushers. The cars used are side dump so that the materials drop into one of the three crushers. After passing through the crusher it is elevated by conveyor to the screen at the top of the building. This is one of the O'Laughlin screens manufactured by John O'Laughlin at Racine, Wis. This screen, A. C. O'Laughlin says, has been the most satisfactory they have ever used. Requiring but little repair it has not delayed the work and best of all, has put them to little expense for renewals. This revolving screen is made up of three screens and discharges two sizes of stone direct into their proper bins. The smaller stone falling on another screen is separated from the screenings.

Each of four bins has a capacity of 1,000 yards and it has been some time since they were filled as the demand for all sizes has been much in excess of the output. The space under the bins allows the wagons to be loaded and also has a track where cars are loaded. A tramway 500 feet in length, extending from the bins, carries surplus crushed stone on cars and dumps for future use, but this season there has been little need for this and the piles are very small.

In the engine house one Atlas engine and two Erie boilers supply the power, as well as the steam heat in the office. A blacksmith shop 40 by 24 feet does all the repairing, so there is little delay when parts of machinery or other things break. One hundred and seventy-five men are employed here and labor is scarce. The plant has an output of 700 yards a day and is kept busy supplying the needs of the surrounding towns. The screenings are all disposed of to asphalt manufacturers, making what was once a waste and expense to handle a valuable asset now. The superintendent of the plant is James O'Laughlin, while the offices in Chicago and the selling department are under A. C. O'Laughlin.



HAWTHORNE PLANT OF THE DOLESE & SHEPHERD CO., CHICAGO.

Lime.

The National Lime Manufacturers' Association.

Meets Semi-Annually

Peter Martin, Huntington, Ind. President
O. F. Perry, New York City First Vice President
W. B. Hill, Kansas City, Mo. Second Vice President
A. A. Stevens, Tyrone, Pa. Third Vice President
C. W. S. Cobb, St. Louis, Mo. Treasurer
B. H. Debebaugh, Louisville, Ky. Secretary

EXECUTIVE COMMITTEE:

Chas. Warner, Wilmington, Del.; O. W. Robertson, Milwaukee, Wis., and the President.

Official Organ, ROCK PRODUCTS.

Practice Fuel Economy.

While fuel economy has been the greatest problem of latter day lime-burning it seems destined to play a still more important part in the industry. The price of coal at the mines has been "boosted" by the operators and in turn the small dealers have followed suit. Whether this is due to a demand that exceeds the output or to car shortage or to some other cause the fact remains that the price of coal has gone up and it behooves the lime-burner to economize in some way so as to meet the additional expense and still get his fair margin of profit.

This in a measure is going against the line of greatest resistance, for efficient lime-burners have already studied that subject until they think they have exhausted it. Improvements have been made but fuel economy still remains the great problem. In his admirable study of "Technology of the Lime Industry," published in Bulletins 4 and 5 of the Geological Survey of Ohio, S. V. Peppel makes this point clear in the following words: "With all these improvements which have increased the capacity, reduced labor, and improved the product, it is very doubtful as to whether any of the kilns in operation to-day could show any better fuel economy than could be obtained from a well managed pot kiln."

Of the four natural fuels for lime burning wood has practically been exhausted and the burner can not expect to obtain a steady supply at economical prices when the demand for timber in other lines of manufacture is so great and the supply rapidly diminishing. Natural gas is obtainable in some sections but no burner is assured of the length of time the supply will last and moreover natural gas should be preserved for domestic uses. Crude petroleum is obtainable in a few localities only. In the majority of cases therefore the use of coal is necessary either directly or indirectly through the producer gas. Then if coal must be used the burner must study his plant in order that it may be used in the most economical manner possible. He must take into consideration many things: the construction of his kiln; the kind of coal best suited for his kiln, the advantage or disadvantage of using producer gas and steam and the saving in labor and repairs. He must consider the quality of his product and must determine by what method he may obtain the best product at the least proportionate cost. It would be well for lime-burners to read Mr. Peppel's article in full, as it contains practical suggestions that will be of value to individual lime burners in solving the problem of fuel economy under the peculiar and individual conditions by which they are limited.

Seeking New Fields for Lime.

TOLEDO, O., November 18.—Lime manufacturers of Ohio and Indiana met here last week at the call of Peter Martin, president of the Ohio and Western Lime Co., to discuss measures of economy in production and transportation and new fields for their commodities.

New Ohio Lime Fertilizer Plant.

CANTON, O., November 16.—Canton capitalists have purchased a tract of land near Sugar Creek for a lime fertilizer plant. The land is well underlaid with the best of limestone.

Ladd's Lime Works Sold.

CARTERSVILLE, GA., November 16.—John Reusch has sold Ladd's Lime Works to W. A. Jackson and the latter has leased the plant to Frank James and Jeff McEver. Mr. McEver was for thirteen years in charge of these works and it was under his management that "the lime that made Ladd famous" was burned. The new proprietors have opened an office in Cincinnati, O., and Gordon Shephard is in charge.

Oregon Plant to Be Removed.

HUNTINGTON, ORE., November 13.—The Oregon Lime and Plaster Co., which has had its plant about six miles from Huntington in the southwestern part of Baker county, has decided to move its entire works to a point on the O. R. and N. railroad, about three miles southeast of Huntington and on the Oregon bank of the Snake river. The plant will be on the new railroad being built from Huntington into Lewiston, Idaho.

New Texas Lime Company.

NEW BRAUNFELS, TEX., November 16.—The New Braunfels Peerless Lime Co. has just begun the erection of their lime kilns and will have one of the most modern and up-to-date plants in the state. The officers of the company are Louis Henne, Sr., president; S. H. Frieze, vice-president; Franz Coreth, secretary, and H. Dittlinger, treasurer. Mr. Dittlinger recently returned from a trip East, where he visited many of the largest manufacturers and obtained valuable ideas.

Erecting New Kiln.

PEIRCE CITY, MO., November 15.—The Peirce City White Lime Co. have recently built a new kiln, making four in all, which gives them a capacity of 600 barrels a day. They have also put in an incline railway, 520 feet in length from the quarries to the kilns. Col. W. A. Raupp, president of the Peirce City White Lime Co. says that he has been operating the plant to its full capacity, and that the demand is good and the market firm. He says he does not look for any change in conditions, but says that the demand is steadily on the increase. He said that the West has nothing to complain of, except a shortage of cars as the freight business has outgrown the equipment, and the majority of the railroads seem powerless to cope with the situation.

Phenix Stone and Lime Company.

PHENIX MO., November 16.—The Phenix Stone and Lime Co. are manufacturers of Phenix white lime and their plant has a capacity of 300 barrels a day. It is one of the oldest lime concerns in the West, the business having been established in 1883. The stone is a white marble similar to that found at Ash Grove and Peirce City, and the lime is high in calcium. The officers of the company are C. R. Hunt, president and general manager; W. C. Scarritt, vice-president, and E. H. Jones, secretary. The general offices for the company are at 1901 Olive street, Kansas City, Mo.

Mr. Hunt said that the demand for lime was steady, and that his company would be able to sell all of the lime they were able to produce if they could secure cars enough to ship it in.

Splendidly Arranged Plant.

TURBID, O., November 17.—The Moores Lime Co. here, has one of the most conveniently arranged plants in the state. Neither time nor money has been spared and the most up-to-date machinery has been installed. They are using about 100 feet of flexible steel hose made by the Sprague Electric Co., of Chicago, to run three "Wonder" air hammer drills made by the Hardsocg Wonder Drill Co., of Ottumwa, Iowa. Their supply of limestone is unlimited as they have a ledge about sixty-five feet deep and fully half a mile long. Gates crushers are used both in the quarry and at the crushing plant across the river.

F. Lawson Moores, president of the company, says the expect to install a fifty-horse power engine in the future which will make faster operation possible. Their equipment for handling the product is first class. They use large trucks pulled by horses to convey the stone to the kilns.

THREE MODEL MISSOURI PLANTS.

Ash Grove White Lime Association Among Largest Producers in the West.

ASH GROVE, MO., November 17.—The Ash Grove White Lime Association is among the largest producers of lime in the West. The aggregate capacity of their plants is 2,500 barrels a day. They have three plants—one at Ash Grove, one at Everton and another at Galloway, Mo. The plant at Ash Grove is the largest, and has a capacity of about 1,600 barrels a day. The headquarters for the company is in the Postal Telegraph Building, Kansas City, Mo. Mr. W. B. Hill is president of the company and has charge of the Kansas City office. Mr. P. J. Dauernhelm is vice president, and J. F. Pollock, treasurer. Mr. J. H. Barton is secretary and superintendent, and is located at Ash Grove, Mo.

The quarry at Ash Grove is well equipped with modern machinery, the stripping being done by hydraulic pressure. The limestone is high in calcium, but there is also a strata containing magnesia, so that the company is able to turn out both kinds of lime. They were among the first to install a hydrating plant in the West, and they are at present making this a feature of their business, although the dealers in the West are a little slow to catch on to the advantages of the hydrated lime. However, they have orders for all of the hydrated lime which they have been thus far able to produce, and the demand is increasing daily.

The Clyde Iron Works, of Duluth, Minn., installed the hydrating plant and the Urschel-Bates Valve Bag Co., of Woodville, Ohio, installed their bag filling machine. Both have been working satisfactorily, and Mr. Barton expressed himself as being highly pleased with the product.

The company has been seriously handicapped by a lack of cars in which to ship their product; in fact, building operations in the West have been materially hampered by this car shortage, as well as the lack of labor. The Ash Grove White Lime Association operates its own cooper shop and during the recent cry for apple barrels sold 4,000 to the orchards in their immediate locality in order to help them out.

Their plants are perhaps the largest and best equipped in the West, every modern appliance and labor-saving device being used in the handling of the material. The plant at Ash Grove is a model of its kind. They have recently erected a water tower of reinforced concrete thirty feet in height and with a capacity of 1,500 gallons. It is two and one-half feet in thickness at the bottom and twelve inches at the top. The estimate of weight which this tower carries is 116,000 pounds. The exterior has been faced with a mixture of yellow lime magnesia and sand, with about 6 per cent of calcium chloride. This makes a hard and durable exterior, and would be well adapted for similar purposes. The Ash Grove White Lime Association will shortly place this product on the market under the name of "Hydrated Hydraulic Lime." It is an excellent cement plaster, and will no doubt find a ready sale.

The materials for the manufacture of this product are close at hand, as there is a Choteau limestone underlying the high calcium strata in the Ash Grove quarries. This contains just a trace of iron and magnesia and makes an especially durable plaster. The Ash Grove White Lime Association have large warehouses in Kansas City at 30th and Genesee.

Mr. Hill, when asked to give an expression about the lime situation, said that their operations had been limited by the number of cars which they were able to secure, and that this, coupled with the shortage of labor, in his opinion had crippled the building industry in the West from 25 to 40 per cent. He said that the Western country was in an exceptionally prosperous condition, and that at no time in his memory were the farmers so prosperous. He said they have been having full crops of everything, and that the fruit season was one of the largest in the history of the state. He said that the farmers had money in bank, and that the West was sure to continue to prosper as the conditions were auspicious.

The Cheney Marble White Lime Co., of Anniston, Ala., has been incorporated with a capital stock of \$50,000.00.

Cement.

The Annual Meeting.

The Fourth Annual Meeting of the Association of American Cement Manufacturers, will be held at the Hotel Astor, Forty-fifth street and Broadway, New York, Tuesday and Wednesday, December 11 and 12.

Tuesday, December 11, will be devoted to the business of the association. The meeting will be called to order at 10 a. m.; luncheon will be served at 1 p. m. and the banquet will be served in the banquet hall of the Hotel Astor Tuesday evening.

Wednesday, December 12, will be devoted to an informal smoker for members only; the reading of technical papers has been omitted at this meeting, owing to the "smoker" feature on the second day of the meeting.

It is anticipated that this meeting will be the largest ever held since the organization of the association, and as many interesting and important subjects will be presented for discussion, every member should be present. Four new members have recently joined the association and the membership now consists of every cement company of importance in this country.

The Cement Man's Revenge.

A cement man went to heaven one day,
As sometimes cement men do,
And they gave him a job with princely pay,
Of running a cement train through
To the Kingdom of Hell: with instructions to haul
From the fiery brimstone bars,
All the railroad men whom he could recall.
But they gave him no cars.

So a message he sent to the realm of Hell,
For the railroad men to be
On the watch for his train. And he rang the bell
With a chuckle of fiendish glee,
And the men lined up as they writhed in pain
On the fiery brimstone bars,
But when the cement man showed up with his
train,
He had no cars.

And so through the endless cycle of years,
The railroad men line up,
With hope dispelled, with groans and tears,
As they drain the bitter cup.
While the cement man makes his run on time
From the gates of pearl to the fiery bars,
And the railroad men in anguish chime,
No cars! No cars!!

A Tribute to the Industry.

The cement testing laboratory, the gift of Mr. Robert W. Lesley, of Philadelphia, to the University of Pennsylvania, in arrangement and equipment, is without doubt the most complete for the testing of cement and concrete, in this country.

The introduction of American Portland cement, which in the early eighties was an unknown, untried material as against the well known foreign brands of established reputation, was very largely due to the perseverance and aggressiveness of Mr. Wesley. Both time and energy have been unselfishly devoted by him toward the promotion of a material which has made such gigantic strides in this country, and the gift is indeed a grand tribute to an industry in which he has achieved success, the American Portland cement industry.

Effect of Oil on Cement.

Much fear has been expressed as to the effect of oil on the floors of roundhouses and engine rooms, but it can be safely said that the deterioration of neat cement when subjected to oil is not of serious import, since the material is not used by itself in practice. Experiments show that if concrete is allowed to set in water for sometime before the application of oil, no ill result need be feared.

Don't Lose Your Nerve.

The acme of perfection has been reached when one knows a business thoroughly and knows that he knows. That this has been achieved by the Portland cement manufacturer in the making of his product is evidenced by the quality of the material which is now produced in this country at the rate of nearly a million barrels a week. This is the important part of the procedure, upon which is dependent the future reputation of the individual manufacturer and the industry as a whole, but it is not the only requisite to make success a continuous performance.

There is another element, another syllable of the word, so to speak, that has a most important bearing on the subject, and one, in view of what has gone before, deserves at this time the serious consideration of the manufacturer. That is the intelligent marketing of the product.

The demand for cement in the past season has been unprecedented and a good price for every barrel made has resulted. The end of the year is close at hand, and with it a partial cessation of building operations, especially those not under cover, with the resultant dropping off in the demand and consequently stocking up of the storehouses at the various mills. It is now that intelligence in selling the product is absolutely necessary, and the progressive manufacturer should thoroughly know how and know that he knows.

The fact to be seriously considered and understood is, that any contract made for delivery of any large quantity of cement running into 1907, does not represent the cement on hand at the time of making the contract, nor the cost of labor and coal, the two important items, in producing it at that time, but does represent cement that is to be made in the future at costs then existing. It is therefore clear that prices on cement for future delivery should be dependent upon future conditions as near as they can be approximated. Therefore, cement now on hand, should be sold for a spot figure and for spot delivery only.

Steel and iron producers are behind in their orders; delivery of any quantity for structural purposes can not be had earlier than within three months at least. Is not this an indication that the building world still "do more"?

Cement has earned its title to and its right to occupy the position of the world's best building material, not only when used with the addition of sand in mortar; with sand and broken stone in concrete, but also with iron and steel as a reinforcement. It is a commodity that has the confidence of the entire building world, due to brains and ability in both its manufacture and the intelligence displayed by those who have had to do with its use in its varied forms. Is it therefore the part of wisdom for the manufacturer who finds himself confronted with a few thousands of barrels of cement accumulated in his warehouse, to jump into the ring and cry "Buy! buy!" just for the mere sake of selling?

Instead of flying off the handle as was done just two years ago, why not view the situation calmly and without panic. Repairs, alterations or additions are required to be made in the quarrying, burning, grinding or some other manufacturing department. Make them, and utilize the labor that has become part of your organization and hold this organization in good shape for the battle of next year. In your selling department, throw out lines for some of the little orders that may have been overlooked during the rush season, a couple of hundred barrels here, and a car load there are worthy of attention. The little orders count. The big jobs are good to get, but don't make them a special target for all your energy; the other fellows will certainly take a shot too and they are all aiming to hit the bull's eye.

We all remember the demoralization that existed in the market in the fall and winter of 1904 and 1905, when thousands of barrels of cement were thrown onto the market at a price less than the actual mill cost of manufacture, to say nothing of selling expense, without rhyme or reason. We remember too the concerted "follow the leader" action on the part of every manufacturer, young and old, to see who could sell the cheapest. Certainly a single experience of this kind should suffice for all time.

This is a question that is worthy of your most serious consideration, and if you would have 1907 as bright for the industry and for the individual as has been the year just closing, don't lose your nerve.

Cable Railway for Cement Plant.

CAMBRIDGEPORT, MASS., November 16.—The Mead-Morrison Manufacturing Co., of this city, has just built and installed an extensive cable railway system for the Sandusky Portland Cement Co., Sandusky, O. W. S. Martin, manager of this department of the Mead-Morrison Co., says that their big machine plant is being rushed to its full est capacity and that the great demand for cable ways from the cement people has already caused his company to enlarge their plant.

Starting Operations.

MONTREAL, CAN., November 16.—The first stake has been driven for enlarging the Thos. Morgan Cement Works at Logue Point, and when completed as is anticipated by June, 1907, the plant will have a capacity of 4,000 barrels a day. The Great Northern Railway will put in a spur track and siding immediately, to facilitate the handling of the materials for the new work.

A Lancaster County Plant.

YORK, PA., November 16.—A large tract of land has just been purchased by A. St. John Newberry from Jacob Aldinger and wife. The purchase was made for the Sandusky Portland Cement Co., of Sandusky, O., which has made exhaustive tests of the materials in this locality, and will now proceed to the erection of a Portland cement works.

Another Plant Contemplated

FORT SCOTT, KAN., November 16.—C. F. Martin is said to be promoting a big cement plant, to be located a few miles east of town, at a point near what is known as the "Diamond Pasture." This property is said to contain all of the necessary ingredients for the manufacture of a Portland cement. Fort Scott has always been noted as the home of hydraulic cement. It is a well known fact that the same ingredients necessary for a hydraulic cement can be made into a Portland cement by another process. At least one of the local plants now manufacturing hydraulic cement is seriously considering the erection of a Portland cement plant, probably in addition to their present plant. They say they have all of the necessary ingredients close at hand.

Kansas Company Makes Extension.

IOLA, KAN., November 16.—The extension to the machine shop which the Kansas Portland Cement Co. is making at its plant, will be of steel and concrete, and will be absolutely fire proof. It will cost about \$12,000.00 and the work of completion is now being hurried through. The dimensions of the new building, which will be located west of the plant, will be 150 feet by 80 feet. The walls will be twenty feet high, with a sloping roof to afford plenty of ventilation. Modern machinery will be installed in this building for making all repairs needed about the huge mill. So complete is the equipment that the machinery itself can almost be constructed in it.

The Right Idea.

PENSACOLA, FLA., November 16.—Mayor Chas. H. Bliss certainly has the right idea in the matter of the use of Portland cement in the construction of the new city hall. During the recent hurricane, the cement that is being used was exposed to the rain and part of it "set," making it unfit for use. That portion of the cement that has become set in each barrel is not being used, and that portion of the foundation already in place appears very firm and hard. The mayor takes the position, however, that the cement may be as good as any, but he does not think it wise for the foundation of an important city building to be made of cement regarding which there is any question, and especially when the city has no experienced man on the ground.

The Largest Coast Plant.

SAN JOSE, CAL., November 16.—Work is progressing steadily on the plant of the Santa Cruz Portland Cement Co., at San Vicente, which, when completed will be the largest plant of the kind on the Pacific Coast. The Ocean Shore railroad which has its terminus at San Vicente, are also proceeding with the extension of the road, and have just let contracts for twenty miles to Pratcher & Chadwick.

North American Portland Cement Co.

Philadelphia, Pa., November 22.—The North American Portland Cement Co., capital \$10,000,000.00 has been formed to build new cement plants in various sections of the country where they are needed. \$5,000,000.00 of the \$10,000,000.00 capital will be issued at once and construction will be begun and continued as rapidly as practicable on the new plants proposed.

The new company is not in any way a merger of any existing companies, but is created and owned by the six leading companies for the purpose of building plants in new territory. The old companies will, it is understood, continue in every way as at present, independent in management, production and prices.

The \$5,000,000.00 to be issued at once will be paid in cash and when it is expended the other \$5,000,000.00 of capital will be issued for further extensions and construction. No securities of the new concern will be offered to the public.

The officers of the new company have not yet been elected. The directors, who were also the incorporators are: J. Rogers Maxwell, Alfonso F. deNavarro and Henry Graves, Jr., of the Atlas Portland Cement Co.; A. F. Gerstell and John B. Wight, of the Alpha Portland Cement Co.; Henry C. Trexler and Edward M. Young, of the Lehigh Portland Cement Co.; John B. Lober, of the Vulcanite Portland Cement Co.; Robt. W. Lesley, of the American Cement Co.; and Ernest R. Ackerman, of the Lawrence Cement Co.

The six leading interests were brought together as a result of a suit instituted by the Atlas company for infringement upon patents owned upon apparatus for burning pulverized fuel, which is used in the rotary kilns. This litigation has been pending for six years, and if won by the Atlas company would give that company a command of the cement trade of the country.

As a result of negotiations, the suit was withdrawn, and the formation of the new company determined upon. The validity of the patents is acknowledged by the other companies, and the Atlas company agrees to assign them to the new corporation, which is to license the other producing companies. It is stated that under these patents, producers of virtually all recognized brands of cement will also be admitted as licensees.

In Hard Luck.

Detroit, Mich., November 22.—The Great Northern Portland Cement Co. has defaulted in the interest on \$600,000.00 bonds and a suit for foreclosure has been started by the Union Trust Co., of Detroit, trustee. A receiver was appointed. The plant and machinery are in fine shape and a reorganization is certain.

Cement Material in Mississippi.

"No cement of any type has ever been manufactured in Mississippi but several large limestone areas occur in the State, and at least one of these is so well located with respect to fuel, supplies, and transportation routes as to give promise of being of future importance as a source of Portland cement making material."

This important statement is made by Edwin C. Eckel, who contributes a chapter on cement to the bulletin of the U. S. Geological Survey, which A. F. Crider has written on the geology and mineral resources of Mississippi.

The available limestone of the State may be grouped and described under three heads: The Mississippian (Lower Carboniferous) limestones; the cretaceous limestones (Selma chalk or "rotten limestone"); and the tertiary (Vicksburg) limestone. The second of these formations, that known as the Selma chalk, is the most promising as the possible basis of a cement industry.

During 1904 the Selma chalk was carefully mapped in the Tombigbee River basin. Samples were taken from all the localities visited. Many of these samples were analyzed and the results are considered encouraging.

The Colonial Portland Cement Co., Limited, advise: "The main buildings of our plant are of steel frame with concrete walls. As soon as we commence the active manufacture of cement, which we anticipate doing early in the spring, we trust to be able to send you some items of interest to your valuable paper. There is not at this time in this vicinity much in the way of cement block houses or work of that character."

Steadily Progressing.

IOLA, KAN., November 16.—The Kansas Portland Cement Co., has its general offices here. Mr. George E. Nicholson is the president, A. B. Cock-erill, vice-president, L. L. Northrup, treasurer and W. S. Goodin, secretary. B. E. Allison is the sales manager for the Independence and Iola plants, and W. H. Jarvis is the sales manager for the Neodesha plant.

Their largest plant is at this point and has been in operation about three years, with a daily output of about 2,500 barrels. The plant is located about four miles from the city, has an ample supply of both limestone and shale close at hand, and is considered one of the best plants in the West. This plant manufactures what is known as the Sun Flower brand of Portland cement.

The plant at Independence, Kans., known as the Independence Kansas Portland Cement Co., is located about four miles from Independence. They only recently commenced operations there and have not yet reached their full capacity. The plant, which was only completed last July, is built on the side of a hill of limestone and shale, and has every natural advantage, the crushers being located at the highest location where the limestone is quarried. They have 10 110 foot kilns and use the wet process. Owing to the fact that they have not been able to procure enough cars they have been unable to run this plant to its full capacity.

The plant at Neodesha is called the Indian Portland Cement Co. This plant has only recently been erected. It will have a 500 barrel daily capacity, which the managers expect to reach within the next thirty days. The same company will erect a plant at Mason City, Iowa, to be known as the Iowa Portland Cement Co.; in fact, work has commenced on this plant, which is to have a 2,500 barrel daily capacity, and the managers hope to have it running by spring. The last plant which they have decided to build is that at Copenhagen, Tenn., the name of which will be the Dixie Portland Cement Co., which will also be a 2,500 barrel plant, and they expect to have it in operation next year, although work has not yet been started on this plant.

Another Plant for Michigan.

ANN ARBOR, MICH., November 16.—The National Portland Cement Co., which has \$70,000.00 already subscribed, will build a 1,000 barrel Portland cement plant at Lake Zukey. The plant will cost \$200,000.00 and the company has 600 acres of some of the best marl land in Michigan for the manufacture of Portland cement.

Disastrous Blaze at Nazareth.

NAZARETH, PA., November 16.—Fire destroyed two large stock houses of the Nazareth Cement Co. November 13, ruining thousands of dollars worth of new machinery, together with half dozen freight cars loaded with cement. The plant was about to be enlarged so as to double the output, and the machinery of the new sections had already been received and was stored in the empty stock house. The loss is estimated at \$175,000.00, with partial insurance.

The Nazareth Cement Co. is the oldest plant in the Nazareth section of the Lehigh district, and under the management of P. H. Hampson, was producing a high grade cement, the demand for which necessitated the doubling of its capacity. Immediate steps will be taken to rebuild and it is hoped to have the plant in bearing early in the coming season.

Central Portland Cement Company.

The Central Portland Cement Co., of Arizona, whose properties are located in Montgomery county, Kansas, are now nearing the completion of their plans for the erection of a Portland cement plant, with an initial capacity of 2,000 barrels a day. This corporation owns in fee, 520 acres, which, according to the reports of Professor Haworth, of the United States Geological Department of the State of Kansas, and S. J. Hatch, a mining engineer and geologist, of Kansas City, Mo., and others, is one of the best sites for the erection of a Portland cement plant in the United States.

In addition to the factory site of 520 acres, which gives ample room for a town adjacent to the plant, the company has secured perpetual gas and oil leases on several thousand acres, which will assure it an ample supply of cheap fuel for a number of years; in fact, the company has already made provisions for the extension of the original plant, so as to increase it from year to year, and they expect to have a 5,000 barrel plant in operation within two years.

The location is ideal. The supply of limestone and shale is practically inexhaustible. It will be noted that this plant is located in the richest gas territory in the country. There is plenty of water available, several springs being on the property, and the railroad facilities are exceptionally good, the Santa Fe passing right through the center of this property and the Missouri Pacific being within a short distance.

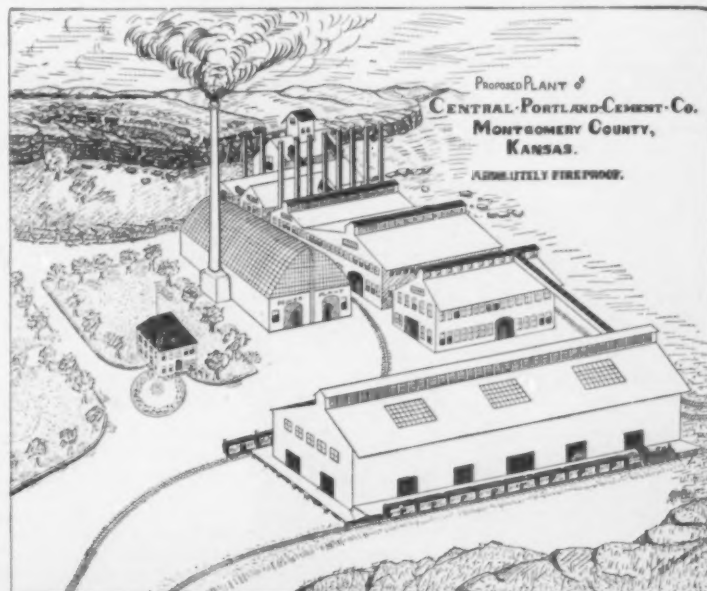
The capital stock of the company is gradually being taken up, and as soon as the corporation is financed, work will begin at once. Bids are now being received for the erection of the plant. It is the intention of the company to erect a plant that will be equal, if not superior, to anything in the United States, of this character. The general offices of the company are located in the Bryant Building, Kansas City, Mo.

A Victory for Cement.

CALUMET, MICH., November 16.—Cement has been the important factor in the saving of a rock salt mine at Oakwood, Detroit, in which Irvine & Wise, J. M. Mulkey and others are interested.

Two years were consumed in endeavoring to overcome the water in the mine. The first 100 feet of shaft was sunk in about two months, but it was found practically impossible to get to the 200 foot level. Various attempts were made to sink the shaft, but the immense streams of water, against which pumps made but little impression, shattered timbers and made every effort a failure. A plan was then laid by which when the stream was encountered an iron pipe was driven in, and with compressed air, cement was forced into the crevice until the water was driven back and the flow stopped.

Several thousands of barrels of cement have been used, but the result has been a victory for the men who stuck to the job in the face of all sorts of difficulties.



Concrete.

Annual Meeting in Chicago.

The National Cement Users' Association announce their third annual convention to be held in the Auditorium hotel, Chicago, Ill., January 7-12, 1907. The usual large attendance at this convention may be expected and the members of the executive committee announce that they are preparing a program containing many features of interest, as well as valuable information for every man engaged in every branch of the concrete industry.

The cement and concrete interests of Chicago have taken an active part in the preparations and arrangements. The great Tattersall hall has been secured for the exhibitors, which is the best guarantee that there will be room enough and to spare.

The executive committee of the association is now preparing the official program and promises that ample provision will be made for the inspection of the exhibits, in the arrangement of the hours for the holding of the sessions of the convention.

The unfortunate conditions of the convention held last year at Milwaukee will be avoided, so that there will be room enough and accommodations to suit every concrete man who attends the meeting.

Care in Mixing Imperative.

Reinforced concrete has grown in popularity this present building year to such an extent, that with becoming modesty it can be claimed that this ideal method of constructing large buildings has captured the structural situation. There is hardly a building of great magnitude in the country that does not contain in its specifications a large amount of concrete, even if the structural members are still of the steel cage type, yet the number of buildings where the frame is constructed of reinforced concrete, by one of the several approved systems, has multiplied by hundreds.

The San Francisco conflagration, right at the beginning of active building operations had no little bearing upon the decision of the builders who afterwards employed reinforced concrete frames exclusively. It means the passing of the good steel-cage construction to the better and well nigh perfect concrete frame. There have been failures of concrete work this year, but in trivial percentage as compared to the enormous expansion in the number of structures that have been built, and in the failures recorded, there is not a single exception to the explanation that the concrete work was not properly done in the first place. Insufficient tamping is the worst feature of the evil, and on account of the high price of cement, there was a tendency to skin the job and put in less of this all important material than was required to make a perfect mixture. In fact, there are very few of the jobs yet built that have the concrete mixture balanced to a scientific nicety.

Another point, the crushed rock and sand which form the great bulk of the concrete aggregate has not received its due share of attention. The practice of concrete contractors in these regards is not to be commended at the present time. The materials must be studied and their equation determined practically, regardless of the theoretical specifications under which the contract was originally let; for the sand varies and the crushed rock varies with every large delivery of such materials; the cement being the only unvariable member of the mass.

We understand that the failures of concrete structures this year will be the subject of discussion at the Chicago convention of cement users, and we believe that what Rock Products has said over and over again, with regard to the careful preparation of materials and the necessity for a practically correct equation for the ratio of the different materials entering into the concrete mass, will be sustained by every engineer whose opinion is worthy of consideration.

Manufacturing at a Profit.

The concrete block has made rapid progress as a building material and in every locality where it is manufactured with intelligence, it has become popular and is an established building material, considered the superior of frame or common clay brick, and some very elegant and beautiful residences have been constructed with them. A large number of important factory plants are now operating within walls made of concrete block. The concrete block has come to stay, but the question of most importance to the manufacturer is, "How can I arrange my plant to make the largest dividend upon my investment and the effort put forth in the conducting of my business?"

The men who have made the largest profits in 1906 are those who operated their factories practically throughout the previous winter, and thereby accumulated a large supply of block, so that they were in a position when they signed a contract, to immediately begin the delivery of the goods. It is an extremely attractive proposition in building operations to have the materials ready. A large part of the cost of all construction is consumed in the assembling of the materials and by the long periods of waiting for various structural parts to be manufactured after the contract is let. The speed with which concrete blocks can be laid into a wall, becomes an enormous recommendation for their use where the manufacturer is able to say, "Can deliver the block on the jobs as fast as teams can haul them." Of course it requires a larger investment to manufacture such a large quantity of blocks and have them ready for building purposes, yet during the winter months cement can be secured at a lower price, and aside from the additional expense of providing tunnels or cars for steam seasoning, there is no difficulty or expense connected with running the concrete block factory beyond the ordinary cost of summer time operation.

To have a large accumulation of blocks on the yard, gives the manufacturer the opportunity of picking out blocks of uniform color for any given job, so that a better character is secured from his work than where every block as soon as manufactured is required to immediately go into the building. Steam seasoning, it is true, cures the slight variation in color to a considerable degree, but still some trivial amount of coloring matter insists upon getting into the face of some of the block, and it is much better for the manufacturer to grade them according to color, in order to avoid offensive discrepancies in the finished wall. There is no waste connected with this method of procedure, for a competent inspector will find in nearly every large number of blocks, all made from the same sand and gravel, and using the same cement, two distinct tints or colors and slight variations in these. These should be separated in such a way that an extremely bright block can never be laid in the wall immediately adjoining one of the darkest shades. It is true that the stone mason has been very derelict in this regard, for you often see buildings made of natural stone, where the variation in color is considerable, but it is just as easy for the concrete block man to make a more perfect wall as to appearance with little or no cost to himself, and it is an aesthetic point that should not be overlooked.

Another point for the manufacturer to consider is, that the rock face block will not be used as much in the future as it has been in the past, and no provision for all possible variations manufactured in the long winter's run should be made without taking this into consideration.

Durability of Concrete.

The imambra connected with the Mohammedan mosque at Lucknow, India, contains the largest room in the world without columns, being 162 feet long, 54 feet wide and 53 feet high. It was built during the great famine in 1784 to supply work for a starving people. It is a solid mass of concrete of simple form and still simpler construction. In its erection a mold of frame work of timber and bricks several feet in thickness was first made, which was then filled with concrete. The concrete was allowed to set and dry about a year, when the mold was removed. Although the building has been standing for 122 years. It is said to show no sign of decay or deterioration.

The Southern Concrete Machinery Co. has been organized at Charlotte, N. C., with a capital of \$100,000.00, to operate under the patents of J. C. Herron on machinery for the manufacture of concrete building blocks and concrete roofing tile.

Concrete in Railroad Work.

At a recent meeting of various members of the Association of Railway Superintendents of Bridges and Buildings, to take up the subject of concrete construction, R. H. Reid (L. S. & M. C. Ry.) described some concrete work done on his road. He said he had found that for heavy traffic, concrete could be put in much more cheaply than stone; that stone could not be handled so as not to interfere with the traffic. For heavy construction he used concrete composed of 1 part cement, 3 parts sand, and 6 parts crushed stone. All large structures are reinforced with steel rods, those of the twisted type giving the best results. Every carload of cement they used was first tested by their chemist, but not over 1 per cent had been rejected. In cold weather, concrete requires a longer time to set. In small structures the forms were usually taken off after one week and in large structures after two months.

In answer to a question from W. N. Clark (B. & O.) as to whether a solid ash pit would stand heat, Mr. Reid replied they had in use a four-inch concrete ash pit and had experienced no trouble from the heat in the ashes. Mr. Clark stated that concrete work could be successfully carried on in cold weather if the frames were left on until the concrete was thoroughly dried. If concrete is mixed wet and kept wet it will not crack afterwards, but if mixed dry it will crack. W. E. Alexander (B. & A.) mentioned the fact that the effect of the sun in the summer on the concrete is as bad as that of a hot fire, and in consequence it is necessary not to let the concrete dry out until the entire structure is up.

J. M. Cummin (L. I. R. R.) said there were several concrete buildings in use on the L. I. R. R., and that so far they had proved satisfactory. He referred to certain cases, however, where the walls of concrete buildings had collapsed, due to the use of too large a proportion of sand in the concrete. Mr. Reid stated that they had a number of concrete whistling posts in use on the L. S. & M. S. Ry. and also concrete fence posts. The posts, placed, cost 44½ cents each.

Concrete Bottom in Lake.

PITTSBURG, PA., November 17.—Under the direction of Charles W. Ehlers, superintendent of Bureau of Surveys, the lake in West Park, Allegheny, has been enlarged to twice its former size, and work has been commenced on the bottom and sides, which will be built entirely of concrete.

Still in the Game.

MUSKEGON, MICH., November 17.—The Concrete Construction Co., which has been under discussion by the council lately, has not discontinued business, as has been stated in council meetings. John Edelman, president of the company, says they are doing business right along, and expect to continue. The company's office is at 43 E. Walton Street.

Fine Concrete Block House.

ELLINWOOD, Kan., November 17.—The Manager of the Ellinwood Cement Co., says: "We are having under construction a fine dwelling house. After it is finished we think it will be one of the finest, if not the finest, concrete block building in the state of Kansas. It will cost in the neighborhood of \$4,500.00 and will be erected of the very best material."

Concrete Houses in Montclair.

MONTCLAIRE, N. J., November 18.—Aaron W. Godfrey will begin in the spring the improvement of some eighteen acres of land which he controls. Streets and other improvements will be laid out at once, and in the spring the erection of forty houses will be begun. It will interest the cement trade to know that these houses will be built mainly of concrete.

Concrete Floors Satisfactory.

WASHINGTON, D. C., November 17.—The report of computers Somerville and Healdy, of the district building department, of the reinforced concrete girders, beams, flooring and columns of the Adas Israel synagogue under course of construction at Sixth and I Streets, were very satisfactory and met fully the standard required by the building regulations. A test of 225 pounds a square foot was applied to the flooring, which showed no deflection, whatever.

Wonderful Wind Anchor.

New York, November 16.—A new device is being employed for the first time, and is being placed in position in the caisson piers which form the foundations of the new Singer building, on Broadway, near Liberty street, New York. The building is to rise to a height of 625 feet, or nearly twice that of the adjoining building, and when completed is to have forty-one stories. The wind pressure, owing to the structure's great altitude will be tremendous, and for that reason the building is to be literally tied to its foundation by an ingenious arrangement of steel rods in conjunction with concrete as shown in the illustration.

The rods are $3\frac{1}{2}$ inches in diameter and descend for nearly 50 feet into the concrete, which fills the caisson resting on bed rocks 85 feet below the surface. The rods are bolted together in lengths of 10 feet, as shown, and the lowest rod has on its end a great anchor plate to which it is secured, the whole system of rods being bolted together, reaching to the top of the caisson and connecting with the iron base of the column above the water table. The rods are then run up into the hollow column which they are intended to support for a distance of 5 feet and bolted into position. The column which is thus tied is built up to the very top of the structure and it is almost impossible to estimate the strength of such anchorage. The work is in charge of Edward F. Kellogg, of the Foundation Co.

Tower Helps In Construction.

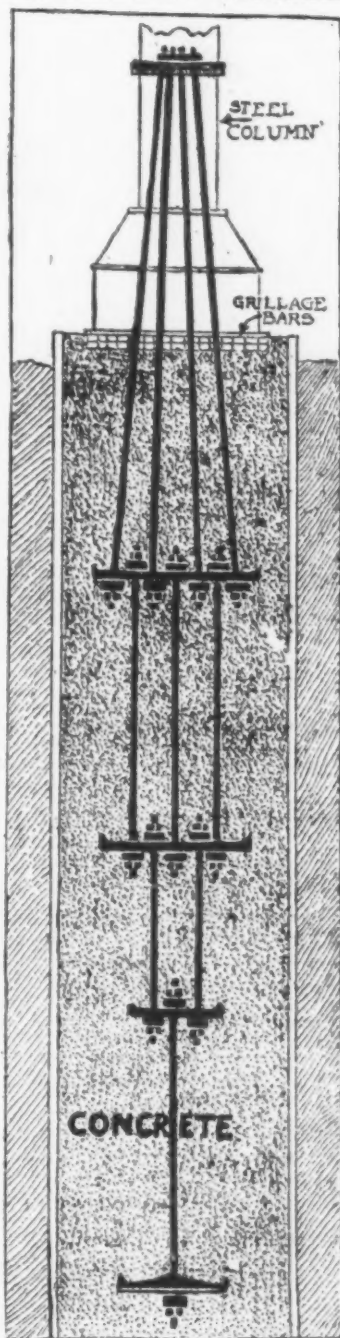
New York, November 18.—Much curiosity has been aroused by a lofty wooden tower which has been built on the site of the new McGraw Publishing Co. building. This building will be twelve stories high and of reinforced concrete construction on the square between Seventh and Eighth avenues and Thirty-ninth and Fortieth streets. The tower is 147 feet high and its base is 32 feet square. Derricks and booms will be swung from the tower to aid in the construction of the building and it is expected that more rapid progress will be made. In speaking of this feature of the work J. T. McClellan, superintendent of construction, said:

"Economy in the handling of materials is the most important feature in concrete building construction. Take that tower for example. It rests on concrete piers carried down six feet into the rock and probably contains enough lumber to build a row of small houses. From its four corners will be swung seventy-five foot derrick beams, having within their entire reach every square foot of the entire plant. We also plan to rig intermediate beams in the four sides of the tower so that the work of placing the concrete in position can be carried on rapidly. With the foundation finished and the structure once above the street level. We are making our plans to erect an entire story over the whole of the building area once every four days. With the increasing use of concrete construction have come many improvements in mixing machines. The latest of these, which we have here on this work, is almost wholly automatic in its operation. The materials are dumped into a sort of hopper, which, at the pressing of a lever, moves up an incline and deposits its contents in the mixer. Six revolutions are made and out comes your concrete fully mixed and ready for use."

The Cement Stone Co., Rocky Ford, Col., has been incorporated with a capital stock of \$50,000.00, by M. Pollock, Chas. H. Baldwin, G. M. Hall, G. H. Taylor, J. E. Lawson, A. M. Jackson and L. W. Babcock.



NEW PLANT OF CONCRETE SAND AND STONE CO.



CONCRETE AND STEEL ROD WIND ANCHOR AS USED IN THE FOUNDATION OF THE SINGER BLDG., NEW YORK.

Perfection Machine in West.

KANSAS CITY, Mo., November 17.—The Perfection Block Machine Co. has been active in the West, and is placing plants at several points. They recently installed a plant in Omaha, with C. F. McCreary, one of the best known concrete block operators in that city. He expressed himself as being more than pleased with the results of the machine. J. T. Summers and B. A. Tomlinson, who are representing the Perfection power block machine in the West now, have also installed a plant at Joplin, Mo., with Mr. Chas. L. Thayer. E. P. Fuller, of Topeka, Kan., whose plant is located at 6th and Van Buren, also recently put in one of these outfits.

Reinforced Concrete for Hospital.

New York, November 18.—Bids were opened October 15 by Commissioner Robert W. Hebbard, of the New York Charities Department, for the group of buildings to be erected by the city at Castleton, L. I., which will be known as the Sea View Hospital. Reinforced concrete will be used extensively in the construction of eight four-story buildings designed by Architect Raymond F. Almiral. The building will cost about \$1,000,000.00.

Look for Good Business Next Year.

KANSAS CITY, Mo., November 17.—The Walton Granolithic Stone Co. has not been doing much during the past season, but is confidently expecting the business to pick up next year. They have been busy, however, making steps, lintels, coping, etc., but have not manufactured any building blocks to amount to anything. The company will place upon the market next spring a machine designed for beginners, and which will sell at the nominal figure of \$50.00. Mr. Walton says that this machine will be able to make blocks of ordinary dimensions and useful for every day purposes, and that with it a beginner can do a nice business. They will continue to manufacture their high grade two-piece block machine, however, and will make an aggressive campaign for business this spring.

Purchase a Weight Machine.

TOPEKA, KAN., November 18.—A. F. Wessen, of 509 E. Fourth Street, purchased a Winget machine a few weeks ago and has been operating it steadily. He says that the concrete block idea is new in Topeka and the public has been slow in taking it up, but he believes that by next season the business will be fairly launched and he has every reason to believe that he will be able to build up a nice business. He is well satisfied with his machine and the blocks that he has been making have attracted considerable attention from architects and builders in Topeka, who have been inclined heretofore to regard the concrete block idea as being somewhat of a fad.

Mr. Wessen says that like all new propositions it is hard at first to make the public have confidence in them, but whenever he can get anybody to come down to the plant and look at the blocks, they soon change their mind and he has had no trouble in convincing them that the concrete block is not only one of the best, but one of the most economical building materials that can be used. He is highly enthusiastic over the prospects and expects to do a large business next spring.

Illuminating Tile Construction.

ST. LOUIS, Mo., November 16.—The P. M. Bruner Granitoid Co. is one of the oldest concerns in the concrete business in St. Louis. It was established in 1878. The company does a very large business in concrete sidewalks and illuminating tile construction of which they make a feature. Their tiling has been in use now for ten years in St. Louis, where it may be seen at the Terminal Hotel of the Union Station, and in a great many other public buildings in St. Louis. All the metal employed in its construction is enveloped by concrete.

Kansas City Regains Confidence.

KANSAS CITY, Mo., November 18.—The Standard Stone and Brick Mfg. Co., 800 Hardesty Ave., has been fairly busy during the past season, but has only erected two buildings out of concrete blocks. F. S. Phipps says that the public is regaining confidence in the concrete block proposition, and that he thinks that by next season the business will again pick up with renewed activity. Mr. Phipps has never had any complaint of any of his work, and he is seriously considering the advisability of enlarging his plant, feeling confident that the coming season will see the concrete block again assume its rightful position among building materials.



PLANT OF STANDARD STONE AND BRICK MANUFACTURING CO., KANSAS CITY, MO.

YOUNGSTOWN PLANT REBUILT.

A. A. Pauly of Concrete Stone and Sand Co.,
Will Keep His Force at Work All
Winter.

Youngstown, Ohio, November 17.—A. A. Pauly, president and general manager of the Concrete Stone and Sand Co. is a busy man, rebuilding his great plant which was destroyed by fire in August last and at the same time taking care of a large number of contracts for building material as well as construction operations that were already under way when his plant was destroyed. He is a man of wonderful energy and endless resource and now as the active season for building operations closes, his plant is rebuilt and every customer has been taken care of.

The new plant is constructed largely with Mr. Pauly's well known monolithic wall machine and veneered with his hollow concrete block. Mr. Pauly remarked that the fire came along just at the height of the season, so that he was compelled for a number of weeks to practically abandon his manufacturing operations, and yet with the stock of blocks already accumulated, he was able to finish several handsome residences, while the work of constructing cellars and foundations with his wall machine crews went steadily on. While the plant was down, the sand operations were carried on by hand and it was necessary to employ every available team in Youngstown and vicinity, as well as a large number of workmen to take the place of the steam shovel.

The new plant is being equipped with up-to-date machinery regardless of expense, to make it the most efficient sand operation in the country, and has operations in concrete construction and the manufacture of concrete building material second to none.

One of the new buildings of the plant which is the molding room for the manufacture of hollow concrete blocks is illustrated as is also a residence which has been completed for several months and which the owner considers the most desirable house he ever lived in, for he is high in the praises of the Pauly veneering block.

Another invention of Mr. Pauly's, fully covered by patents, which consists of a seasoning car, where the concrete blocks are placed on shelves or tiers and then closed and fastened tightly, so that exhaust steam can be injected by means of a system of pipes, is shown in the picture. This system of seasoning is at once the most perfect and economical plan that the writer has ever seen, for the blocks that come out of the cars after twenty-four hours seasoning are far superior to anything that can be accomplished by seasoning in the open air for thirty days by the old time sprinkling process. The cars are low in cost and it takes but little steam to accomplish perfect seasoning. The uniformity of the product in texture and color at all seasons of the year is worth to any manufacturer, who has a sale for his product, all that such a system will cost for its addition to his equipment. It is Mr. Pauly's

HOUSE VENEERED WITH PAULY HOLLOW CONCRETE
TILE.

intention to continue the manufacture of his building blocks throughout the entire winter with a full force of hands, working three machines in order to accumulate an adequate supply of block with which to commence next season's building operations, for he already sees an enormous demand for his blocks with orders on hand for all that he can get ready by that time.

Purchase a Perfection Power Machine.

LAWRENCE, KAN., November 18.—E. P. Fuller has purchased a complete outfit from the Perfection Power Block Machine Co., Minneapolis, Minn., and is erecting a plant on a large scale on First street between Madison and Jefferson. He has been using a Winget and a Palmer machine for the past year, and says business has grown to such an extent as to justify him in putting in the Perfection power machine.

He has secured a contract from the Santa Fe Railroad to furnish them blocks for the building of several shops. The contract calls for 50,000 blocks with a privilege of using 100,000. Mr. Fuller is a thoroughly experienced concrete operator and has sold machines for the Winget Concrete Machine Co., at Columbus, O., and is thoroughly conversant with the concrete block industry. J. T. Summers, who is representing the Perfection power block machine in the West will arrive shortly and superintend the erection of the plant, which will be up-to-date in every particular.

St. Louis Building Boom.

ST. LOUIS, Mo., November 19.—Even to the casual observer the building operations of St. Louis are of immense proportions, and even at the close of the season there is no let up in construction. The Red Ring brand of Portland cement is much in evidence in the erection of the fourteen story Blackstone building, corner of Broadway and Chestnut street, the seventeen story Liggett building, Eighth and Chestnut streets, the nineteen story Wright building, Eighth and Pine streets, to cost \$750,000.00, and the "Bixby" department store and office building of sixteen stories, at the corner of Oliver, Locust and Tenth streets.

Other work under way consists of the Leasehold building, to cover half a block on Fourth street, between Pine and Chestnut, a seventeen story building to cost \$1,750,000.00, the Marquette Hotel at Eighteenth and Washington avenue to cost \$750,000.00, and a nine story building for the Brown Shoe Co., at Seventeenth and Washington streets.

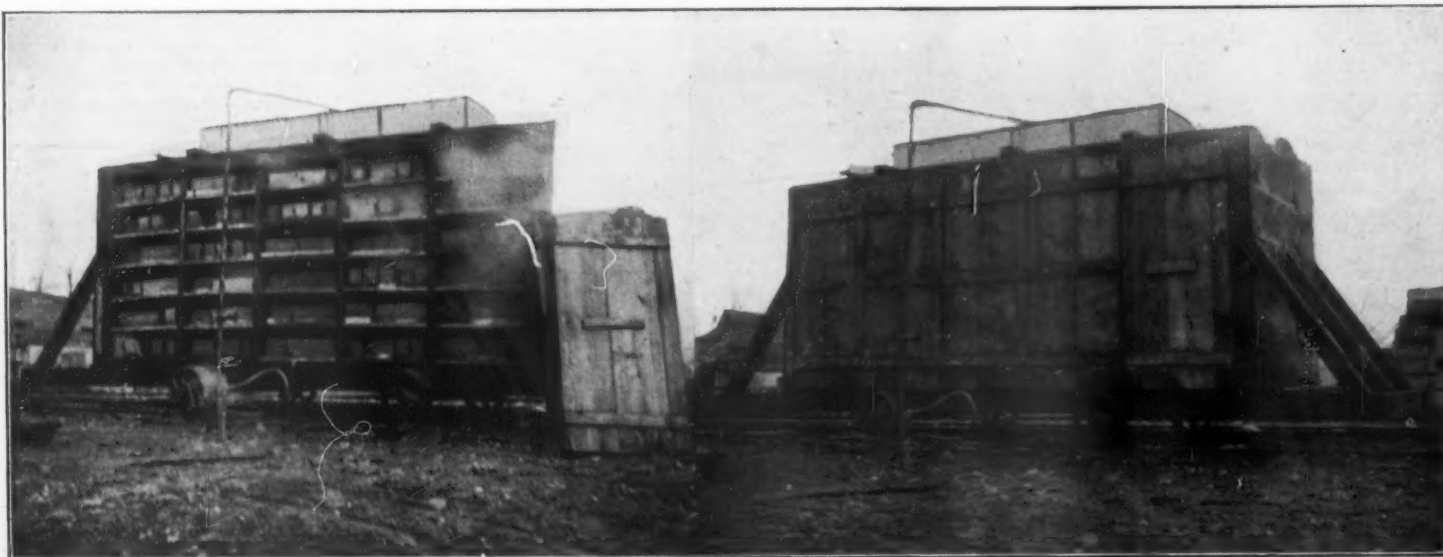
Ground has been broken for the Ely & Walker ten story wholesale building, to face on Washington, Locust and St. Charles streets; a nine story shoe house at Fifteenth and Washington avenue; two nineteen story buildings at Olive and Broadway, one the Wells building on the northwest corner, and the Third National Bank building on the southeast corner; the Cella building and the Miltenberger building, each to be fourteen stories in height, at the corner of Broadway and St. Charles streets, at a cost of \$850,000.00. Butler Bros., will erect a building nine stories high to occupy an entire block at Seventeenth, Olive, Locust and Eighteenth streets, which will be the largest reinforced concrete building in St. Louis and will require about 60,000 barrels of Portland cement.

Cement and steel are the main factors in all building operations, evidencing the enormous demand for and growth of re-inforced concrete construction in the building operations of St. Louis which equal in magnitude those of San Francisco and Baltimore.

In consequence of this enormous amount of building, naturally the labor question assumes serious shape; special committees have been obliged to visit other cities to secure mechanics and masons. This situation is, however, rounding out in good shape, which means a continuance of the growth of the city of St. Louis far into the future.

Has Sold Out the Business.

KANSAS CITY, Mo., November 18.—B. L. Simpson, of the Granolite Manufacturing Co., 2008 M'Gee, has sold the business to J. G. Harper & Son, and the firm is now called the J. G. Harper & Son Manufacturing and Constructing Co. They have not been manufacturing any blocks lately, but have been busy making sills, coping, lintels and steps, for which they have a large sale. They use the Carthage limestone screenings and dust for an aggregate and have been making their stone 1 to 4. Mr. Simpson has patented a gold separator and has gone down into the gold fields to test its practicability.



PAULY SEASONING CARS, CONCRETE STONE AND SAND CO., YOUNGSTOWN, O. ONE CAR IS OPEN FOR UNLOADING, THE OTHER CLOSED FOR STEAMING.

Cement Stone and Supply Co.

WICHITA, KAN., November 16.—One of the most successful concrete operators in this city is the Cement Stone and Supply Co., at Wichita and Second streets. The officers of the company are H. W. Lewis, president; I. F. West, treasurer and manager, and T. R. Steele, secretary. This firm manufactures hollow concrete building blocks, foundation stone, door and window sills and has also erected some buildings out of re-inforced concrete. In their plant they use the Seamans, Dykema and Ideal machines, and the Smith mixer. They make their own moulds for sills, lintels, copings and trimmings.

Among the notable buildings which this firm has recently erected in Wichita are the Y. M. C. A. building, which was built of re-inforced concrete, several concrete bridges over the canal, the Hays Saddlery building, the Salvation Army building, the Lawrence building, the Weber Block, a school house at Lyons, Kan., and the Methodist church at Conway Springs, Kan. All the buildings they have erected have given satisfaction.

The blocks which this firm is turning out are splendid specimens. Their plant is thoroughly modern and only the highest grade materials are used.

Mr. T. R. Steele, the secretary, says they have been busy the past season and have several large contracts on their books at the present time. He says they never undertake a job unless there is a good margin of profit in it, and by this method they have established the reputation which they mean to sustain and can only sustain by getting a good price. He says the majority of dealers make the mistake of trying to do work too cheap, and as a consequence they are not only unable to make any money, but never build up a reputation, as they can not afford to use high class materials or give the job the attention which it requires.

Manufacture Concrete Fence Posts.

KANSAS CITY, KAN., November 16.—The Paragon Concrete Fence Post Co., with offices in the Portsmouth building, manufactures molds which they sell to individual parties or to concrete workers who already have an established business. Their posts are re-inforced with steel cables, and have eyelets at intervals on the side so that the barbed wire can be strung on them. The corner posts are re-inforced by a side support. Mr. J. F. Wilson, who is the patentee and who has charge of the business, says that his company has been successful in placing their machines.

Many Big Contracts on Hand.

CINCINNATI, O., November 18.—George F. Noland, manager of the local office of the Concrete Steel Co., reports that his company is doing a great business. A. J. Redway, vice-president and general manager, is in the East at present visiting the home office and looking after the company's interests in that section. One of the many large contracts this company has is the building of an eight story factory for the Colgate Co., of Jersey City. The building will be solid concrete and the cost of this work is about \$60,000. The new Kenton County Infirmary at Latonia, Ky., was erected by this company and the entire building is of concrete with the exception of walls. They are also building Money-Perry-Hammond Grocery Co.'s building at Columbus, O., and the St. Francis school building in this city. This company has used Alpha cement almost exclusively and thinks there is no better mixer than the Smith No. 2.

New Form of Chimney.

ST. LOUIS, MO., November 16.—The Atlas Construction Co., 611 Missouri Trust building, is exploiting the Wiederholdt System, of building a re-inforced concrete smoke stack. They also have a system of wall construction devised primarily to make possible a wall of concrete that can be built without frame or false work. The wall is composed of concrete re-inforced with steel bars vertically and horizontally and covered on both inside and out by a fire clay or cement tile that forms a perfect mold for the concrete during construction thus eliminating all false work and frame and reducing the cost of a re-inforced concrete wall to a considerable extent. By means of the steel re-inforcement, the wall can be made to stand any desired load either vertically or horizontally and is excellently adapted for storage bin and elevator construction where an absolutely fire-proof structure of great strength is necessary.



CEMENT BLOCK PLANT OF LOUISVILLE PRESSED STONE CO., SHOWING FOUNDATION OF CONCRETE HOUSE.

Full of Business.

Bloomington, Ind. November 17.—Mr. Charles J. Axtell, manager of The Cement Block Co., says he has had all the business he could attend to. They have just completed a large factory building for William Seward & Co. and have a contract for another similar plant to be erected in the spring for E. R. Fletcher. The Seward foundry occupies one building, while the machine shop will occupy another concrete block building which is now approaching completion. There have been a large number of residences built of block turned out by this plant and with the operations of the season approaching completion, he is now practically out of block.

They are busy getting in a supply of sand for the winter's run, for Mr. Axtell is one of the manufacturers who believes in having on hand a supply of block sufficient to put up any size structure that he may find an opportunity to bid on. One of the jobs in course of construction is a two story plant for the Creamery Co., 40x60 feet. He uses Pettyjohn machinery exclusively and Atlas Portland cement with sand that is shipped by rail from a bank seventeen miles away. Mr. Axtell remarks: "We have no difficulty in getting all the business that we can possibly take care of with our present facilities." His plant is built of blocks of his own manufacture, an illustration of which appears upon this page.

The Mistletoe Concrete Co. has been incorporated at Oklahoma City, Okla., with a capital of \$30,000.00. The incorporators are J. A. Crow, C. M. Crossland, Fort Worth, Tex.; J. W. Dandel, Oklahoma City.

The Standard Concrete Co., of Milwaukee, Wis., has been organized by Jacob Jonas, Thomas Morrissey and Samuel Eckland, with a capital of \$4,000.00.

Morris Hollow Concrete Block and Construction Co., Granite City, Ill., has been succeeded by Morris Lumber and Construction Co., and the capital has been increased from \$5,000.00 to \$25,000.00.

The E. Hicks Co. has been incorporated at North Vernon, Ind., with a capital of \$10,000.00 to carry on stone and concrete construction work. The incorporators are Eldo Hicks, Edwin Hicks and Carney Hicks.

Eclipse Construction Co. has been incorporated at New York, with a capital of \$10,000.00, to manufacture concrete blocks. The incorporators are: P. W. Gaylor, New York; A. Kulenkampf, William Dubee, Brooklyn, N. Y.



CEMENT BLOCK CO., BLOOMINGTON, IND.

Building Residence for Himself.

LOUISVILLE, KY., November 20.—John E. Simon is president of the Louisville Pressed Stone Co., whose plant is at Fifth and A Streets. Cement blocks, ledges, columns, etc., are all made on the machine of the American Hydraulic Stone Co., Denver, Col., the mixture of sand and cement being made with a Williams & Forrest mixer.

In addition to various building work in Louisville, Mr. Simon is just finishing a handsome residence for his personal occupancy, the first floor foundations of which are shown on this page.

Wichita Concrete Block Industry.

WICHITA, KAN., November 17.—The concrete block industry has been thriving in Wichita. Large operators have been busy throughout the entire season. Stores, warehouses and apartment buildings have been built out of concrete blocks, and have given entire satisfaction. This is because the men engaged in the concrete industry in Wichita know their business and each strives to outdo the other, with the result that the industry has reached a high plane and the concrete block holds a high place among the building materials used in this city.

Wichita Coal and Material Co. is operating three Reed machines and will put in seven more in the spring. The demand for concrete blocks is so heavy that they have been forced to increase their capacity to take care of the out of town trade. This firm ships blocks over southwest Kansas and northern Oklahoma. They also use molds of their own make for constructing lintels, steps, window sills and coping, for which they also have large demand.

Another concrete operator who has been successful is R. F. Kirkpatrick, of 513 West Douglas street. He has a large force busily engaged making blocks, has been working eight hours every day since early in the spring and is now 8,000 blocks short of the demand. Mr. Kirkpatrick has been in the business two years in Wichita, but has built up a trade by strict attention to the details of manufacture. He personally superintends the making of all of his blocks, as well as lintels, steps sills and caps for which he has special molds. He uses both the Reed and Eclipse machines, and says they have been giving eminent satisfaction. He is at present furnishing blocks for the Strunk building, which is to be 125x142 feet, and three stories in height.

Have a Stock on Hand.

LAWRENCE, KAN., November 18.—The Lawrence Granitoid Manufacturing Co. has a plant at 1024 Massachusetts street, and is using a Normandin machine. The company has been in business for about a year and has been busy all summer with a lot of small contracts, principally foundations, porches, sidewalks, etc. They have a complete line of molds for manufacture of lintels, steps, coping and porch columns. They have secured several contracts for the erection of houses in Lawrence this coming season and will, in all probability, enlarge the plant and put in more machinery.

Universal Portland in St. Louis.

ST. LOUIS, Mo., November 18.—J. C. VanDoorn has charge of the St. Louis office of the Universal Portland Cement Co., in the Odd Fellows building. He is assisted by Edward Quebbeman. Among the notable buildings in which Universal Portland cement has been used is the Union Electric Light and Power Plant, recently built at the foot of Ashley street. The main building is 600 feet in length, and is built entirely of re-inforced concrete. One of the unique features of this building is an immense outer wall of re-inforced concrete, which is used as a settling basin. A railroad track will run across the top of this wall and barges can be loaded and unloaded from it. The main object of this outer wall is to keep the river from doing any damage to the main building during high water. Another job for which the Universal Portland cement is being used is the building of six concrete conduits.

Wichita Hydraulic Stone Co.

WICHITA, KAN., November 16.—One of the most successful concrete block operators in Wichita is the Wichita Hydraulic Stone Co., at 546 West Douglas avenue. This concern uses the Ideal, Miracle, Reed and a new machine manufactured in Wichita which has not yet been placed on the market and which J. T. Waddington, the manager, calls the "Christian," from the name of the man who invented it. They use the Smith mixer and make all their own moulds for sills, caps, lintels, coping and ornamental work. They have erected many handsome churches, store houses and residences in Wichita and nearby towns, and are at present erecting a handsome building for the Trinity Methodist Episcopal Church of concrete blocks. The whole building is to be in red. Rackle & Sons, of Cleveland, O., have charge of the art work on the upper part of the building, and have a large force of men on hand, making moulds which are first cast in plaster of paris and then in concrete.

Among the more recent big jobs which the Wichita Hydraulic Stone Co., have erected, may be mentioned the school house at Freeport, Kan., a bank at Rose Hill, Kan., residences at Wellington, Towanda, Bainville and Benton, Kan., and residences in Wichita. Mr. Waddington says that they have been busy all summer and the indications are that next year will be even busier.

An Important Merger.

COLUMBUS, O., November 16.—The United Cement Machine Manufacturing Co., has begun business at the former office of the Winget Concrete Machinery Co., in this city. The new company is really a merger of three well known concerns; the Harmon S. Palmer Hollow Cement Building Block Co., Washington, D. C.; Cement Machinery Co., Burlington, Iowa; and the Winget Concrete Machinery Co., Columbus, O.

In the organization of the new company which is capitalized at \$1,000,000.00, Harmon S. Palmer becomes the president; J. F. Angel, vice president; J. M. McDowell, secretary, and J. W. San-

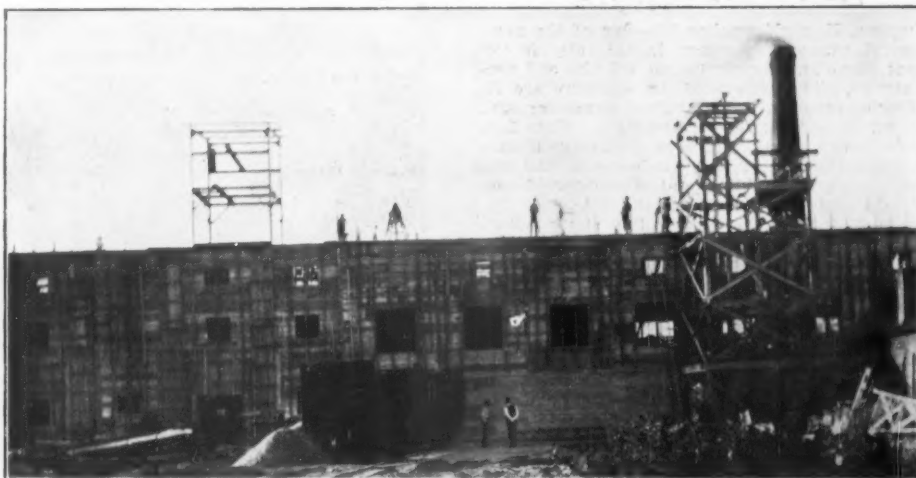
derson, general manager. All the assets of the three concerns, which include many valuable patents, besides plants, foundries and patterns for the manufacture of machinery for manufacturing concrete building block and brick machines of several well approved types, concrete mixers, and all the necessary tools and appliances for equipping concrete block factories of any desired capacity, have been assembled under one efficient management.

The company has leased a large four story building, located at the corner of Maple and Front streets where the main offices of the company will be located and where warehouses and show rooms will be maintained for the inspection of purchasers of machinery.

The Demand Continues.

IOLA, KAN., November 16.—The Iola Portland Cement Co. is erecting a 3,000 barrel plant at Ft. Worth, Texas. The foundations for this plant are already in and some of the buildings are well under way. All of the materials necessary for the manufacture of a high grade Portland cement are close at hand, and facilities for transportation are excellent. The company expects to have this plant in operation early in the spring. The Iola Portland Cement Co. is also erecting a plant at Mason City, Iowa.

E. R. Stapleton, general sales manager, says the demand still exceeds the supply by many thousands and barrels. Labor was very scarce in many localities and the car shortage and labor troubles have retarded business to a great extent. He says that he does not see how the cement situation will materially change in the near future, as the increase in output will not meet the increase in demand and that the price on cement will no doubt remain at the present figure all through the winter.



PITTSBURG PLATE GLASS CO.'S PLANT AT CRYSTAL CITY, MO.

Erecting Plate Glass Plant.

ST. LOUIS, Mo., November 18.—A new plant for the Pittsburg Plate Glass Co. is being erected at Crystal City, Mo., 28 miles below St. Louis. The company is doing all of the work themselves and the buildings have been under construction for more than a year. There will be fifteen buildings of reinforced concrete. The Universal Portland Cement Co. is furnishing the cement and it is estimated that the Pittsburg Plate Glass Co. will use 50,000 barrels. Even the roof is to be of re-inforced concrete tiles, 4 feet by 8 feet. This company purchased the Allis-Chalmers engine which was exhibited at the World's Fair in St. Louis and supposed to be the largest engine in the world. Its weight is computed to be 1½ million pounds. This gigantic engine will operate all the machinery. It is to be set on a foundation built of solid concrete.

Block Tests Satisfactory.

BOSTON, MASS., November 18.—Interesting tests have recently been made at the United States Government Arsenal at Watertown for Boston purchases of concrete building blocks. A block made by the Hayden machine showed a maximum compressive strength of 800,000 pounds without any fracture. This was the greatest pressure the government's machine was capable of giving. In another case to determine the non-porous qualities of the blocks another block made on the Hayden machines was tested and showed satisfactory results. The building department of Boston has given the block made on the Hayden machine unqualified praise.

Has Been Very Busy.

KANSAS CITY, Mo., November 18.—H. E. Maynard, 1931 Grand Ave., says that he has sold out his block machine business and is now confining himself to the manufacture of concrete steps, lintels, coping and caps, for which there is a big demand the year round in Kansas City. He says for the time being he has stopped manufacturing concrete hollow blocks, as there is no demand. He says the industry received a "black eye" in Kansas City about a year ago, and since that time he has given up trying to do anything. He has been busy during the past season, and expects to continue operating throughout the greater part of the winter.

Built with Perfection Press.

BROOKLYN, N. Y., November 17.—Through the courtesy of M. K. Sawyer, sales manager of the Perfection Power Block Machine Co., Minneapolis, Minn., Rock Products has been supplied with a photograph used in the accompanying illustration of two family apartments which have recently been completed at the corner of Greenwood avenue and Sherman street (Flatbush), which were built by T. H. Sherman with concrete blocks manufactured with the Perfection power machine. Mr. Sawyer has been making his headquarters at Hotel Cadillac, New York, for several weeks getting the plant at Brooklyn in good running order and from the results shown in the illustration it looks as if it is "all there with the goods."



FAMILY APARTMENTS IN BROOKLYN, N. Y., BUILT OF CONCRETE BLOCKS, MADE ON THE PERFECTION POWER BLOCK MACHINE.

Cement Brick.

An Optical Illusion.

There are still a large number of people who consider the cement brick as exceedingly vulnerable to moisture after being placed in the wall, by reason of the fact that in every shower of rain the drops of water readily change the color of the exposed wall and make it appear to be wet. There never was a more mistaken idea, for a well made cement brick will not absorb as much water as a clay brick of equal quality when both are immersed. The difference is one that appeals to the eye only, and a cement brick wall will not absorb anything like the amount of moisture when exposed to the rain as will a clay brick wall. It requires only a very short period of time for the cement brick wall to assume its natural gray color, which proves that it dries out very rapidly, or rather that the moisture has never penetrated it to any great extent.

This object is not so noticeable in walls that have stood for a long time and have been repeatedly moistened and dried out. It is the intrinsic cleanness of the cement brick that lays it open to this apparent objection, but it is an objection that passes away of itself. A wall constructed of cement brick is more impervious to moisture, has a greater crushing strength, will carry a greater transverse load and has a far superior tensile strength than any other brick that has yet been offered for the consideration of the builder. Where the sand supply makes it cheap enough, it is to be recommended for all classes of brick construction.

"Try This One On."

The question of quality is always one of interest to the intelligent manufacturer, or at least to the man who desires to increase the earnings of his plant and add to the reputation of his material.

Bricks that are made of sand and cement are enormously improved in quality by using hydrated lime in the mixture, and after the bricks are molded, curing them in a steam seasoning tunnel, car or other provision which may already be in use at the plant. In place of using a mixture of one part Portland cement to four parts sand, the mixture can be changed to one part Portland cement, one part high calcium hydrated lime to four parts of sand. The Portland cement and hydrated lime should in every case be thoroughly mixed first and then this mixture, remixed with the sand and mortar. The concrete mass in this way becomes much more plastic owing to the presence of the hydrated lime, the molding can be done more perfectly and the danger of breaking off the corners and edges is lessened to a considerable degree, and thus it becomes much easier to handle a pallet loaded with green molded brick.

The brick that are turned out in this way are much denser than those made of sand and Portland cement alone and when seasoned with steam heat and moisture in from 24 to 48 hours, which period of time must be determined by experimentation, a very perfect, extremely high grade and uniform building material is produced. The advantage of using this kind of a mixture becomes very evident when the operator is called upon to mold ornamental or feature-faced brick having sharply defined lines and curves in the mold. The brickmaker who is not altogether satisfied with the product he is turning out can experiment on a few dozen brick at his own plant by the expenditure of a few cents, and he will be amply repaid by the smoothness in the working of the material, to say nothing of the additional resistance to dampness of the finished brick.

Purchase Cement Brick Plant.

GOLDFIELD, IA., November 18.—John and Richard Riley purchased Wesley Bellknap's cement block. They expect to have their plant in operation understood that the purchase price was \$4,000.00.

Size of Brick.

Brick manufacturers discovered many years ago that there are many advantages and disadvantages to be found in either large or small brick, and after careful study of all the conditions decided to compromise on a brick which should have as many advantages and as few disadvantages as possible. This investigation resulted in the adoption of the present standard size, which is 8 inches by 4 inches by 2 1/4 inches.

Making Attractive Brick.

ELMIRA, N. Y., November 16.—The Chemung Cement Products Co., one of the newest industries here, is doing some wonderful things in the cement block line. The product has been used to some extent in building here and in appearance is identical with rock face sandstone. It has proven in all cases so far, its superiority to stone or brick. Those interested in the proposed new Hotel Gerald to be built at Lake and Market streets are seriously considering the use of the new product in its construction.

Leases Larger Quarters.

SHEPHERD, MICH., November 17.—The Shepherd Cement Tile Co. has leased the Shepherd Foundry and machine shops for the purpose of manufacturing their machines, the demand for which has been too great for the quarters now occupied. Mr. Husted, an expert machinist, has been engaged to manage the manufacturing end.

New Maryland Factory.

HAGERSTOWN, MD., November 16.—John B. Wolfkill has just completed a factory on the Williamsburg pike, just beyond the C. V. railroad for the manufacture of cement blocks. The plant has been built so as to permit enlargement. The demand for cement brick in this locality is steadily increasing and all of Mr. Wolfkill's product will likely find an immediate market.

Takes Over Big Business.

DES MOINES, IA., November 16.—The Enamel Concrete and Machine Co., with a capital of \$500,000.00 has taken over the business of the Western Enamel Brick and Stone Co. The officers of the new company are D. M. Johnson, president; I. E. Tone, vice-president; Oren Ruffcorn secretary, and Frank Stehm, treasurer.

The new concern will continue the making of machinery for producing concrete building material with polished surface, the machine controlled by the company turning out polished brick with one process. The Iowa Enamel Brick and Stone Co., a subsidiary corporation, will continue the manufacture of enamel brick and stone from sand and Portland cement, which is commanding a big market in Des Moines and vicinity.

Building His Own Residence.

JAMESTOWN, N. D., November 16.—George Balch who has been engaged in the manufacture of cement building blocks at this place, is completing a residence for himself made out of his own material. This is a new departure in this territory and the house is attracting quite a lot of notice.

A Complete Block House.

STERLING, ILL., November 15.—One of the most complete cement block houses in this section is being erected by contractor John Myers, for Thomas A. Galt on Avenue I. Cement blocks for building purposes have come to stay, and the future will no doubt see many of such residences here.

Will Build Plant at Oakdale.

OAKDALE, IND., November 17.—George Oliver and B. P. Keyport have begun the erection of a factory to manufacture cement brick and building block. They expect to have their plant in operation early in the spring.

Residence Attracts Attention.

LAS VEGAS, N. M., November 17.—H. Lunsford, who recently started in the business of manufacturing cement brick and building stone, has about completed his first contract by erecting an elegant residence for Judge Fielding. The work on this house has attracted no little attention, and Mr. Lunsford has all the business he can possibly attend to.

ROOFING.

Testing Roofing Slates.

Methods of testing the elasticity, absorption, fissility, and resistance of roofing slates have been in use for many years, and many more or less complete chemical analyses of slate have been published. In recent years, however, more exact methods of reaching these results have been devised. All such methods have been brought together in bulletin No. 275 on the slate deposits and slate industry of the United States which Mr. T. Nelson Dale of the United States Geological Survey has recently prepared.

Tests are given by Mr. Dale for determining the sonorousness, cleavability, cross fracture or "sculpting," character of cleavage surface, presence of lime, the color and discoloration, the presence of clay, of marcasite, of magnetite, the strength, toughness or elasticity, density or specific gravity, the porosity, hardness or abrasion, and the corrodibility of slates.

One of the most satisfactory and decisive tests of slate, in the opinion of Mr. Dale, is the microscopic analysis. A thin section of slate examined under the microscope will suffice to show the character of the cleavage, the presence of false cleavage, if any, the probable durability, or indurability of color, as well as the presence of any mineral constituents likely to determine its other qualities. Mr. Dale quotes Merriman to the effect that chemical analyses give only imperfect conclusions regarding the weathering qualities of slates and do not satisfactorily explain physical properties.—*Denver Reporter.*

Philip Carey Manufacturing Company.

CINCINNATI, O., November 19.—The Philip Carey Manufacturing Co., whose plants are located at Lockland, a suburb of Cincinnati, at Plymouth Meeting, Pa., and at Baldwinsville, N. Y., is one of the largest concerns of its kind in the world. Their principal offices at Lockland are models. Were an idealist to visit this plant he might well say, "They are infringing on my copyright; this is ideal." Special arrangements are made in the building by means of large windows for ventilation and light and all partitions between the departments are of glass. The furnishings are in quartered oak and very handsome. All floors are hardwood. The 150 employees in these offices have their lunch in the large dining room provided by the company on the second floor. The cuisine is delightful and is in charge of an experienced chef and assistants.

The company maintains its own fire department, water works, electric light and gas plants, own their own side tracks and operate their own switching engines, freight and tank cars.

The products manufactured at the Lockland plant are asbestos molded pipe and boiler covering, felt coverings, flexible cement roofing, asbestos air cell pipe covering, lime pipe coverings, "Slater's felts," plain felt for roofing, deadening and other purposes, sulphuric acid and roofing paints. The plant at Lockland covers twenty-nine acres of ground but the company expects to erect a new covering factory in the near future 400 feet long by 100 feet wide and four stories high. The plan will be similar to that of the other buildings.

The company's plant at Baldwinsville, N. Y., produces asbestos paper, asbestos rope and wick packing, fine asbestos fibres, asbestos cord and twine. The plant at Plymouth Meeting produces 85 per cent carbonate of magnesia steam pipe and boiler coverings, pure carbonate of magnesia and allied products.

The company has branch offices and ware rooms in fifty-two cities in the United States, Canada and Mexico. Each plant is represented by about ten salesmen. Another plant is in course of construction in Canada.

New West Virginia Company.

HUNTINGTON, W. VA., November 20.—The Standard Cement Brick Co. has been incorporated with a capital stock of \$100,000.00 by John S. Farr, William B. Smith, Estella Farr, Clell Smith and Lizzie Smith. They will erect a factory and equip it for the manufacture of cement brick, building blocks, etc., and engage in the contracting and construction business.

PITTSBURG AND VICINITY.

(Continued from Page 3.)

for the entire amount of this by-product of these furnaces for a period of ten years. The contract calls for from 600 to 800 tons of slag daily. The slag is not the usual run of furnace slag, but is of a better grade than that from most furnaces, in fact there being only two other plants in the country that can furnish the same grade of slag, these being the tube company's furnaces at Wheeling, W. Va., and Lorain, Ohio.

The slag is of a more compact nature than that from ordinary blast furnaces, and therefore better adapted for use in manufacturing the materials turned out at the plant of the Fireproof Penetrable Brick Co. There is said to be simply no limit to the number and styles of articles that can be manufactured from this combination of slag, chemicals and cement. Almost anything for which a mould can be made can be manufactured successfully, it is said.

The most remarkable feature about the product is that in the articles made from the mix known as "granulated slag," nails, spikes, etc., can be driven as readily as wood, and are at the same time as hard to remove as from a piece of seasoned oak. Railroad ties, telephone poles, fence posts, guards, fireproofing, penetrable brick, etc., are made from this mix. Tests have demonstrated that a 3/4 inch railroad spike can be driven just as readily and as securely in one of the ties as it can in a wooden tie, and with absolutely no danger of cracking or splitting. Another feature is the remarkable difference in weight. An ordinary faced wooden tie will average in weight about 130 pounds, while one of the slag and cement ties will weigh but 70 pounds, slightly over one-half the weight of wood.

These ties, as well as the fence posts, telephone poles and cattle guards are reinforced with wire cloth and steel wire. The reinforcing medium is inserted into the wet mix in such a manner that every part of the unit is bound in the strongest manner, and all stress equally distributed in the reinforcing material in case of any possible deflection. This granulated slag is made by having the slag come in contact with water as it comes from the furnace.

The crushers were furnished by the Good Roads Machinery Co., and have a capacity of 40 tons an hour. The plant for the manufacture of stone, brick, poles, etc., was installed by the Miracle Pressed Stone Co., of Minneapolis, and can turn out 1,500 building block, 1,000 posts, 1,000 ties and 65,000 brick a day. Wood and sheet iron moulds are used for ties, poles and posts, while ordinary wooden moulds are used for the rest of the product. No machine pressure is used in filling the tie, pole and post moulds, all tamping being done by hand. It takes from six to seven days for the mix to set ready for use, and this can be cut down to sixteen hours by the use of a steam dryer, which the company proposes installing later.

Experimenting with Slag Pile.

The company is not experimenting with a slag pile that can be driven direct under heavy pressure, and has been entirely successful. As soon as possible, this will be placed on the market. Tests have demonstrated that these piles can be made any length desired, and that there is but little danger of breakage, while the deflection under enormous pressure is barely noticeable.

The brick manufactured for fine building purposes are surfaced on the exposed side with a mix that is much finer than that used in the body of the brick, and which gives a smoother effect than the finest pressed brick. The brick, as well as the building blocks, can be made in the natural stone color, red, light or dark gray, or in fact any shade desired. Sixty-nine different styles of building block are now being made at the plant, and special shapes and designs are made from any drawing.

There is another company now in the process of formation in Pittsburgh that proposes the erection of a plant for another novelty in production. This is The Fireproof Door Co., and was formed by Titus DeBobula, Robert L. McKallip and Harrison Bock, all of this city. The company will manufacture doors, sashes, panels and other building materials from concrete.

The Minerva Building Block Co., of Minerva, Ohio, has a plant at Sallenville, Ohio, for the manufacture of hollow building blocks and brick. This plant was formerly a brick plant, and most of the machinery is used, building block presses being the only additions. The company has been turning out a

large number of these blocks, which have become popular in the vicinity, and Manager Ruff, of the plant, says that he is more than pleased with the way the people have taken up the production of his plant.

The Pittsburgh Hydraulic Stone Co. has in operation a plant on Hamilton Avenue, for the manufacture of building blocks, etc., and supplies the greater portion of the blocks that are used in the city by contractors who do not own and operate their own machines.

C. J. Farrar, engineer, contractor and builder, 105 Dinsmore Avenue, Crafton, Pa., a suburb of Pittsburgh, makes a specialty of buildings of cement block construction, and is probably one of the best versed men in the city in this particular class of work. He has designed and erected a large number of concrete building block residences in Crafton, Ingram, Thornburg and other residence districts of Pittsburgh, and enjoys the distinction of not only building the residences, but makes all of the building blocks used in their construction on the site. This he does through the medium of movable plants for the manufacture of these blocks, and has found the practice satisfactory and



PLANT OF FIREPROOF PENETRABLE BRICK CO., AT ELROD DOVER, PA.

economical. Several of these houses have been built on speculation, although the majority have been built on contract for individuals, who are now occupying them. Mr. Farrar is himself living in one of these concrete block residences, which he built several years ago, and finds it a satisfactory building.

J. B. Sumney & Co., 112 Pine Street, Carnegie, Pa., are also contractors who have been doing considerable cement block residence work within the past year or so. They also manufacture their building blocks on the site of the work. At the present time they have the contract for a fine residence on Valley Street, Ingram, for Robert J. Millard.

John L. Kirk, Ferguson Building, is local representative for the Ideal Concrete Block Machine, and has equipped several contractors in the vicinity of this city with complete apparatus for the manufacture of these building blocks. H. Hersen, of New Brighton, Pa., is using one of these equipments in the manufacture of blocks for a number of cement block contracts that he is filling in the Beaver Valley.

Divides Concrete Construction Into Two Classes.

Architect Titus DeBobula, who has made a careful study of concrete in all of its various forms, and who is recognized as an expert in its use, gives some interesting information regarding concrete, both in mass and in building blocks. He divides concrete construction into two classes, one being cement blocks, brick and various other stone imitations, while the other is monolithic construction, which may be either concrete reinforced with iron, or plain and without any reinforcement. In speaking of cement blocks, he says that they are now being used extensively as substitutes for stone, and clay brick, but that there are two objections to its use in this manner. The first objection, he says, is that it is impossible to give the cement block the natural face of stone, and that as a result the walls are artificial and flat looking. The second objection is that the joints, which on account of the large size of the block, pass through the full thickness of the wall, are liable to open with the action of the weather. He also says that ordinary concrete as used in this manner is not

waterproof and that a house built in this manner is liable to be damp unless the greatest precaution is taken in its construction.

He favors the monolithic form of concrete construction, claiming that it has none of these objections. The wet concrete is poured into the wooden forms and tamped, thus doing away with all joints, and forming a perfect one-piece skeleton of the building. These walls can either be plastered on both the inside and outside, or can be faced with brick, as is done with brick veneered buildings. These plain concrete walls can be constructed six inches, or even thicker, according to the load they have to carry, without using reinforcement. For thinner walls, Mr. DeBobula says that where tension and sheer are desired, the concrete can be reinforced with iron to good advantage. Some engineers who are not accustomed to the use of concrete have made the mistake of putting too much iron in it. The Baltimore fire proved conclusively that reinforced concrete construction appeals strongly to the average house builder, who is thus enabled to save 20 per cent of what a frame or brick house would cost him, and in addition, have an absolutely fireproof building. These buildings are also sound, heat and insect proof, and are cool in summer, and easy to heat in the winter.

The first example of the concrete residence in Pittsburgh was built ten years ago at Sheridan, a suburb, by John Murphy, a contractor and builder. The construction of this house was an experiment, which, however, turned out so well that Mr. Murphy decided to move his family to the new dwelling, and use it as his residence. For a number of years previous to the starting of this building, Mr. Murphy had given considerable thought to the question of the construction of absolutely fireproof residences, and the building of this house was in continuation with the trend of his ideas. The house is of steel frame construction, no lumber being used in the skeleton, and the walls, both inside and outside, are of reinforced concrete, expanded metal lath being covered on both sides with a good coating of cement, which was laid by boarding the intended thickness of the walls, much in the same way that the work is done at the present time. The roof was constructed in the same manner, and is supported from underneath by the interior walls, these taking the place of the roof trusses as used in this class of work to-day. The floors are of concrete, as are the arches on each floor, and no flooring boards are in use. All stairs are in this style of reinforced concrete, as is the porch. All wainscoting, and the bath room, are of marble, the only wood that is in use being the doors. Mr. Murphy says that his experiment was a complete success, and that he has succeeded in building an absolutely fireproof residence. He further says that it was the first building of this construction that was ever built in this country.

Will Make Concrete Building Blocks.

There is another new plant for the manufacture of concrete building blocks to be erected during the winter at Mt. Union, a short distance from Alliance, Ohio. The company has not been organized fully, but will be financed principally by Pittsburghers. Theodore Mistecki, a machinist, of Alliance, is the inventor of the system that will be used, and special machinery for the manufacture of the blocks is now being built in Pittsburgh. A tract of three acres of land has been secured at



JOHN MURPHY'S RESIDENCE, AT SHERIDAN, PA., FIRST CONCRETE RESIDENCE OF THIS TYPE IN THE UNITED STATES.

Mt. Union, which is really a part of Alliance, and it is thought that the plant will be completed by the first of the year, and will place a large quantity of the blocks on the local market during the coming building season.

The Midland Supply Co., Midland, Pa., is doing a large business in concrete building blocks, having a portable plant in operation in that city. The company has contracts for the building blocks for twenty-five houses that will be erected at Midland, as well as a number of contracts for buildings in other parts of Beaver County.

North of Pittsburg, probably the largest business in cement and concrete building blocks belongs to M. C. Ruckenstein, of Butler, Pa. He not only manufactures large quantities of these blocks, but carries in stock many styles manufactured by other dealers. He conducts both a wholesale and retail business, and his warehouses cover several acres.

The American Hydraulic Stone Co., East Liverpool, Ohio, is one of the leading factors in the cement building block industry in the Pittsburg district, and has a large business in their special hollow cement block, which is largely used in this territory, not only for residences, but for churches, stores and business buildings.

At Conneville, Pa., one of the largest cities in the immediate vicinity of Pittsburg, is located the general offices and works of the Pittsburg Art Stone Co., a concern that makes a specialty of the manufacture of all kinds of building stone and trimmings, window sills, door sills, lintels, base course, wall coping, chimney tops, etc. This firm also makes a specialty of the manufacture of all kinds of cemetery work a feature being the manufacture of fancy and plain fences, markers, tombstones, etc., and is the only concern in this district that has taken up this particular branch of the work.

S. B. Chunn, Huntington, W. Va., has several portable building block machines in operation, and has been enjoying a good business all summer. His latest contract, awarded a few days ago, is for the building blocks, as well as the general contract for two fine residences in that city for D. J. Moore. Each will be two stories in height.

Heller Bros. Co., Youngstown, Ohio, have been awarded a contract for the construction of a four-story business block in that city for Clegg Bros., wholesale grain and produce dealers. The building will be 33 by 73 feet, and will be constructed of steel, the outer walls to be of cement building block. The block will be manufactured in Youngstown by the contractors.

The Hennebique Construction Co., 1123 Broadway, New York, has about completed the concrete work on the Pennsylvania Lines Station, on Federal Street, Allegheny, and the building for the Adams Express Co., which is but a few yards away. These are two of the most important types of the reinforced concrete building in Pittsburg, as well as two of the largest and most difficult to construct on account of the extreme acute angles in the roofs and roof trusses. The company's own system of armored concrete has been used throughout, which consists technically of the imbedding of the iron bars in the cement, while the ends are hooked around bars of the walls, beams or trusses running in opposite directions, thus binding together, not only the one unit, but binding together the entire building.

The structure was designed by Price & McLanahan, of Philadelphia, Pa., and the general contract was awarded to William Miller & Sons Co., of Pittsburg.

The work of the Hennebique Construction Co. is personally looked after by Mr. W. R. Twohig, who has his own force of men on the work. A feature of the building is the concrete tower 160 feet in height that is being built over the southern end of the building. This tower is supported by four reinforced concrete beams, each 24 inches square and 18 feet in length. The tower walls are 24 inches thick at the base, and taper to 18 inches at the top. The outer walls of the building are 24 inches in thickness, the roof, which is of concrete and has the unusual pitch of 1 foot to 14 inches, is 3 1/2 inches in thickness. The first and second floors are 10 inches in thickness at the beam, and 5 inches at the panel, and have a straight span of 16 feet and 6 inches, from center to center. The floor of the third story is a straight slab of concrete, 4 inches in thickness. On the first and second floors, there are two bays, the large girders being 50 feet in length, with the spans 16 feet 6 inches apart.

During the early stages of the construction of the building, the 50-foot girders were subjected to

an unusually severe test for a building of this character, where no unusual weights will have to be sustained. A dead weight of 60 tons was left suspended from the center of one of the girders for three months, and the deflection was but three millimeters. Then forty tons were removed, and the girder went back to the natural position, there being no deflection whatever with the dead weight of twenty tons.

The first and second floors are constructed to sustain a weight of 175 pounds to the square foot, while the third floor and attic are to sustain 150 pounds. All of the floors are tested, however, with a dead weight of 300 pounds to the square foot, under which weight the deflection shown was but one millimeter, and the floors resumed the normal position as soon as the weight was removed.

In addition to the few buildings mentioned in this article, there are at least a score of large reinforced concrete buildings in course of construction in Pittsburg at the present time, a number of which have not reached the stage where photographs would show the building to advantage. These buildings, as well as several new systems that are being developed, will be taken up in detail in these columns within a short time.

A New York Company.

CENTREVILLE, N. Y., October 2.—The Centreville Concrete Co. has just been incorporated with \$5,000.00 capital. The directors are: John McDowell, F. B. Hill, E. W. Kinne, N. B. Hill and Abram Kniffen, of Centreville; Louis Wohl, of Mountindale, and Ellsworth Baker, of Hurleyville. The company has machinery on hand and expects to engage in the business of manufacturing concrete building blocks.

Huge Reinforced Standpipe.

BOSTON, MASS., October 7.—George H. Snell, water commissioner and superintendent of the water works plant at Attleboro, Mass., presented a paper at a recent meeting of the New England Water Works Association, describing the reinforced concrete stand-pipe, which he had just brought to completion. The standpipe is 50 ft. in diameter, 106 ft. high from the inside of the tank to the top of the cornice, having a capacity of 1,500,000 gallons of water. He considers the standpipe both from an economical and engineering standpoint a complete success. The reinforced concrete standpipe that has been in service at Fort Revere, in this city, was the suggestion upon which Engineer Snell acted in building the stand-pipe at Attleboro.

Organizing a Concrete Concern.

LONG BRANCH, N. J., October 19.—Walter G. Thecker is engaged in organizing the Coast Concrete Construction Co., with headquarters here. The largest part of the capital stock has already been subscribed. Mr. Thecker has been engaged in construction work for five years, during which some of the largest engineering works in the United States have been under his supervision.

Growing Rapidly.

SANTA ANA, CAL., October 1.—Messrs. Ward & Wallace, proprietors of the Santa Ana Artificial Stone Co., state that they got their plant started in January last with only a small beginning; that their business has gradually increased until they are now capable of turning out an immense amount of concrete building blocks, and there is a demand for every one that they can make. They have a large number of contracts for all kinds of dwelling houses as well as business structures. They state that artificial stone is fast becoming the most popular building material and superceding frame structures, because of its fire proof qualifications, and because houses can be built with a saving of 50 per cent on the construction of walls, as compared with wooden construction upon the present lumber quotations in this section. They state that they can put up 8 in. walls at 25c per superficial foot.

The Malad Block, Brick and Cement Co., of Malad, Idaho, has been organized with a capital stock of \$10,000.00.

The Northern Hydraulic Stone Co., Maringo, Ill., has been organized with a capital stock of \$25,000.00 by H. L. Hanley, L. S. Whittemore and N. M. Staat.

New Concrete Hotel in Toledo.

TOLEDO, OHIO, October 22.—The new Secor Hotel now in course of erection will be reinforced concrete throughout. The building when finished will be nine stories high, with an attic almost one story high.

The Bently Construction Co. are the contractors, and their work is watched with interest by local builders. This is one of the largest contracts for reinforced concrete ever undertaken. The Bently people have a novel way of hoisting the material. A derrick more than 100 feet high has been erected which must be clear of the building.

Large Concrete Barn.

TAUNTON, MASS., October 12.—The Alger Concrete and Cement Co. is building up a splendid business in that locality in the construction of residences, cottages, and in short nearly every kind of building by the use of concrete blocks. At the present time they are building a concrete barn for Clinton F. McComber, 30x30 feet, two stories high. The concrete material manufactured by the Alger Co. is rapidly coming into favor as a building material as it has many qualities to commend it to the public.

The Good Work Continues.

ROCHESTER, N. Y., September 29.—City Engineer Fisher went out to the new reservoir at Cob Hill yesterday to witness the laying of the first concrete block for the walls of the reservoir. The blocks for the reservoir walls are each 20 ft. in height built of concrete and a hollow space 7 ft. high and 3 ft. wide in the base of each, so if a leak occurs the workmen can get right at the center of the trouble and fix it. The rock are 15 ft. through at the base.

Unbroken Record of Prosperity.

NEWARK, OHIO, October 10.—The artificial Stone and Plaster Co., of West Newark, of which A. H. Pitser is president, is being enlarged to take care of the growth of business. This is one of the concerns engaged in the manufacture of concrete blocks that have had an unbroken record of prosperity from the beginning more than two years ago.

Newly Organized.

PARKERSBURG, W. VA., October 18.—A new corporation has been organized and a charter has been asked for the Citizens Concrete Co. The incorporators are: B. D. Spilman, Philip D. Neal, C. H. Shattuck, John J. Kennedy and Henry Daly. It is the intention of the company to manufacture concrete building blocks and all kinds of cement products, and engage in general building and contracting, also do cement paving, curbing and all kinds of concrete work. This latter department has been in operation for some time, the company having already put down several thousand feet of cement paving in different parts of the city. A complete outfit of machinery to make an up-to-date plant will be installed as fast as practicable.

An Able Manager.

BELOIT, WIS., October 10.—W. B. Appleby, who has been engaged in the manufacture of concrete stone at Milwaukee, Wis., has assumed the general management of the Beloit Stone Co. This company operates by the system of the American Hydraulic Stone Co., by what is known as the Ferguson method, and have already built up a good business.

Will Continue the Business.

ROSE HILL, S. C., October 15.—The Syllecau Manufacturing Co. have absorbed the Carr Contracting Co., and moved the concrete block plant to their premises, and will continue to furnish the public with concrete building block.

Good Contract Secured.

STERLING, ILL., October 18.—G. H. Hall has secured the contract for a large factory building to be constructed for W. T. Egan, and has begun to manufacture the concrete blocks with which the building is to be erected.

Sand-Lime Brick

Come to Chicago.

Come to Chicago! The third annual convention of the National Association of Manufacturers of Sand-Lime Products, will be held at the Palmer House, Chicago, Ill., December 5, 6 and 7. It is earnestly desired that every plant engaged in the manufacture of sand-lime brick, shall be represented at this meeting, as well as every person who is interested in the industry. There will undoubtedly be a large amount of educational matter presented for the consideration and benefit of the manufacture, and the discussion will undoubtedly be of great benefit to every attendant. H. O. Duerr, secretary of the association, announces the following program:

- President's address.
- Secretary's report.
- Treasurer's report.
- Thoughts for the best good of the association.
- Grinding machinery.
- A letter from Prof. Woolson.
- Silo methods vs. other methods.
- Suggestions as to pushing the sale of sand-lime brick.
- Paper on results of experiments, by Dr. E. W. Lazell.
- Insurance.
- Discoloration of brick.
- Suited presses.
- Can slag be used to advantage?
- Preparation of lime.
- Mixing.
- Why journals do not take more active interest in sand-lime brick.

The expressions in the discussions, from the men of experience who are conducting their business profitably, are well worth the trivial cost of attending the meeting, and it is to be noted that only those who have attended conventions in the past are obtaining any satisfactory success in this last year. Let us all meet in Chicago and boom the business.

It Is Time for a Change.

There has developed a feeling of dissatisfaction in the sand-lime brick industry in the past year by reason of the fact that so little can be learned with regard to the real progress of the industry. Every man who operates a plant is interested in knowing what the other plants are doing, but it is almost impossible to get the slightest amount of information, except by a personal visit, which consumes too much time for the busy manufacturer to consider.

A large number of handsome buildings has been put up with sand-lime brick this year. The volume of actual construction will probably be at least ten times that of last year, or to state it differently, 10,000 bricks have been sold in 1906 for every 1,000 that were sold in 1905. This represents an enormous expansion, and the difference in the testimony as we see it can be stated thus:

One year ago, nearly every manufacturer seemed to have something to complain of, either in the way of equipment or in the quality of materials that he was using in the manufacture of his brick, while in the present season, they are only willing to say, "We are busy making and selling all the brick we can produce."

The manufacturers of sand-lime brick seem to be shy of publicity, or unwilling to tell all they know about the industry, probably fearing some one else will get rich on what they know, or have discovered in the course of their operations. This might have been a good idea in the Dark Ages when feudal barons preyed upon their neighbors, but it is not up-to-date and it won't go in 1906. If there is any reader who thinks he knows it all, we must pleasantly invite him to take another guess.

Sand-lime brick is being manufactured profitably at a large number of the plants now in operation. The machinery manufacturers have solved many of the riddles which at first seemed to offer

insurmountable difficulties, and there have been many good lessons learned which will never again be encountered. If the coming Chicago convention is to be an "experience meeting" for each of the manufacturers to tell his little story for the benefit of the whole assembly, then it is going to be highly profitable to each participant and a great incentive to the industry as a whole, but if on the other hand, an organized attempt is inaugurated to discourage the manufacturer it will react upon the sales department and the popularity of the brick itself.

No better building material was ever manufactured than the sand-lime brick, and when the plant is located right, with regard to the supply of the proper kind of sand and equipped by one of several good systems of machinery, there is no reason why, with ordinary intelligence, that a satisfactory profit shall not be collected for the money invested. It is so, because the brick can be sold at a good price in almost any market.

Let the spirit at the coming Chicago convention be one of progressiveness.

An Answer to a Query.

In *ROCK PRODUCTS* of October 22, we published a query asking how sand-lime brick stands in a wall that is built in a wet place, using the sand-lime brick for foundation. Out of quite a number of replies, we have selected the following which seems to give sufficient answer. O. M. Tupper, superintendent of Highland Sand-Lime brick Co., Antioch, Cal., says:

"We built a 17 inch wall, 20 feet high to hold back a bank of sand, about three years ago. The roof of the our factory rests on this wall and all rain water from the roof 60x24 feet runs on this sand. The pressure against the wall is great and is wet about one third of the time. No water seeps through the wall. The recent earthquake shook this wall down and upon testing some of the brick we found they stood a crushing stress of 4,200 pounds a square inch. I would say that sand-lime brick improve every year that they come in contact with water. The town of Antioch, Cal., where our works are located have used our brick exclusively for foundations."

New Plant for Wellsville.

WELLSVILLE, N. Y., November 14.—The Wellsville Face Brick Co. intends to erect one of the largest sand-lime brick plants in the United States. W. S. Calhoun, of Genesee, is the promoter and owns considerable of the sand property, 25 acres of which will be devoted the manufacture of sand-lime brick. Estimates on the plant indicate that \$40,000.00 will be invested in machinery and other equipment to produce a capacity of 20,000 brick a day.

Find a Ready Market.

JACKSONVILLE, FLA., November 8.—The sand-lime brick plant located at Live Oaks is doing a fine business at the present time. A first class brick that finds a ready sale is being manufactured.

Are Working Night and Day.

SANTA CRUZ, CAL., November 5.—The Monterey County Sand-Lime Brick Co., located at Seaside, four miles northeast of Monterey, is now running day and night. The day shift is steadily turning out 16,000 sand-lime brick while the night workers are engaged in burning lime, part of which is used in the manufacture of the brick. All of their lime rock is shipped from quarries located at Santa Cruz. The capacity of the kilns is forty barrels a day.

New Company in Old Virginia.

CAPE CHARLES, VA., November 12.—The Old Dominion Granite Brick Co. has been organized with a capital stock of \$200,000.00, and they expect to at once begin the erection of a plant for the manufacture of brick upon a large scale. Officers of the company are H. A. Knapp, president; V. L. Peterson, treasurer, Scranton, Pa.; L. M. Sturgis, vice-president, Cape Charles, Va.

Bricks Attracting Attention.

NEW CASTLE, PA., November 20.—The Lawrence Sand-Lime Brick Co., of this place, has begun the manufacture of brick and the beauty and excellence of the product is attracting no little interest, for very few people here have ever seen anything of the kind.

Tribute to a Good Brick.

The St. Louis Chemical Co., writing to the Saginaw Sandstone Brick Co., over the signature of C. H. Laflamboy, secretary, makes the following statement:

"Would say during the winter and summer of 1902 and 1903, we used upwards of a million of your sandstone brick, about half of which were laid during zero weather. Many of the brick being shipped on flat cars, were covered with ice, and we were obliged to build a fire around them to thaw them out. We used the brick for piers, foundations, walls and gas flues, and many were laid with a torch under the mortar board to keep the mortar from freezing.

"The piers in some of the foundations stood in water which was alternately frozen and thawed, and notwithstanding all these adverse conditions, not a sandstone brick went to pieces, while we were obliged to replace a large number of clay brick which had completely disintegrated.

"We have examined the brick from time to time, and find that they are continually growing harder. We believe sandstone brick to be the best building material on the market to-day, and unhesitatingly recommend them as such."

An Up-to-Date Plant.

FT. WAYNE, IND., November 16.—The Ft. Wayne Pressed Brick Co. has one of the best as well as one of the best equipped sand-lime plants to be found anywhere. The buildings are all made of the product of the plant previous to the fire which destroyed it one year ago, and they are very handsome structures. Albert W. Butler, president and secretary, has done some wonderful things toward the uplifting and expansion of the sand-lime brick business, considering the fact that he has been hobbling around on a cane for the past few months nursing a broken ankle.

As a result of Mr. Edwards efforts the plant is one of the most compact in existence and is probably operated with less men than any other plant considering the number of perfect brick turned out. They are making 20,000 brick with seven men. The plant will be enlarged in the spring and the capacity will be doubled as they are 400,000 brick behind their orders at this time. Mr. Edwards says: "The sand-lime brick business is good and there is money in it, but the great trouble to-day is that the manufacturer does not study the business closely enough. Therefore he makes mistakes which sometimes cost him thousands of dollars. If he had consulted engineers or those who had passed through the fire, this would have been avoided. And then too, some plants are too small to pay, they are not making enough brick and have too much help."

Form Company in Texas.

EL PASO, TEX., November 10.—A company has just been organized and \$100,000.00 capital stock has been subscribed for the purpose of erecting a factory for the manufacture of sand-lime brick. The officers of the new company are J. S. Stuart, president; A. Courchesne, vice-president and S. H. Sutherland, secretary and treasurer. They have already purchased a large part of their machinery which is now in transit, and when fully equipped, they expect to be in a position to manufacture 40,000 brick a day. Local sand is said to be of the highest class for this purpose. The promoters expect to have their plant in operation by January 1.

Will Use Pulverized Granite.

ALAMEDA, CAL., November 18.—John M. Fisher, president of the United States Pressed Brick Co., associated with J. Bliss Dudley and George C. Souther, has decided to construct a plant for the manufacture of high grade building brick from pulverized granite and lime. This process has been successfully used at Asheville, N. C., and several other places, the pulverized granite being a high grade of extremely sharp sand. The making of the brick is identical with the ordinary manufacture of sand-lime brick.

To Have Railway Facilities.

MIDDLETOWN, N. Y., November 16.—Work has begun on the construction of a spur of the Lehigh and New England railroad from the Brown limestone quarry to the Thompson quarry, a distance of three miles. The Thompson quarry was recently purchased by the Bethlehem Steel Co. and its white limestone is said to be very rich in lime, approaching closely 100 per cent.

Plaster.

Changes That Have Come to Plaster.

There is hardly any part of house construction that has undergone more radical changes in the past few years than that of plaster. Just when it began, and how, is not so important, here as the fact that what is known as hard wall plaster has been steadily crowding the old-fashioned lime mortar into the back ground the past few years, and it promises to crowd it still further in the next few years. This hard wall plaster is calcined gypsum, the material that we used to call Plaster of Paris. It got its name in the early days from the fact that gypsum was first calcined and marketed in Paris. Among the initiated, however, this name is lost, so to speak, for while there is still plaster of Paris, Kansas, Ohio, Oklahoma, Michigan and a few other points are producing and calcining gypsum for the general trade here at a very satisfactory rate and this calcined gypsum is being made into hard wall plaster of various kinds and it is increasing in certain localities. In fact, practically every city of prominence has its hard wall plaster factory these days and some of them have a number of such factories which produce this plaster, or rather make it up by various formulas so that all that is required to make it ready for the wall is the addition of water. There is some that is called pulp plaster, others called fiber plaster and wood wall plaster. Practically all of them use wood fiber in some form or other from coarse like excelsior to a very fine pulpy mass of disintegrated wood. It is not possible to give the exact formulas, for these are trade secrets, and any way, that are not essential to the retail dealer in this material. What he wants to know about it is, does it offer any advantages to him as compared to lime mortar for this same work? Whether it does or not depends somewhat on local conditions. How near one may be to the factory making this material, and how convenient on the other hand the supply of lime and sand is. It may be that in many cases it will figure out that there is an advantage to the house builder and to the lumberman in the use of hard wall plaster from a first cost standpoint, but this is not likely to be common at the present time, in fact, it is much more likely to be the other way. It will probably cost the house owner a little more to put on hard wall plaster and it may be possible that the retail dealer will have to put up with a smaller percentage of profits for the value of the material handled, yet these are not the only factors to consider. If the house owner gets a better house by this method, he ought to be pleased, and generally will, for there is no question but that we have come to the day when people get more attention to the subject of building well than they do to that of building as cheaply as they can. With this fact established the fact that hard wall plaster is an advantage to the builder, is not so much a question of whether the lumberman will sell lime or hard wall plaster, as it is whether he will sell hard wall plaster or nothing, for if he does not furnish it the chances are some one else will and he will lose his lime trade and gain nothing. It is therefore not only advisable, but practically imperative for the progressive retail lumberman to not only study the subject of hard wall plaster, but to be the one to first lay it before his patrons so that he will get the benefit of the trade. It might be said, too, that this same idea applies in all lines of builders' supplies, that is, if the lumberman is counting on furnishing these things he should keep right up with the times and keep the new ideas and new offerings properly before his trade, or else some one else will get them before the trade in a different manner and he will find himself losing out. But that is getting off the subject a little, for plaster is what is under consideration now.

To be prepared to talk plaster intelligently, and especially hard wall plaster, calls for personal study and investigation on the part of the retailer.

but prominent dealers in this class of material have paved the way for this with circulars and literature explaining at some length what their product is, how it is used, and how it compares with lime plaster. Of course there is a chance now and then that the makers of the various kinds of hard wall plaster will paint the picture a little too rosy in their enthusiasm, but still they give one a very good insight into the possibilities, which can be followed up and toned down if necessary to fit the requirements of retailers' presentations to prospective builders. I have before me at this writing a sample of hard wall plaster literature which is put out by the Toledo Builders' Supply Co., of Toledo, O., that contains both information and suggestions. For example, after pointing out the disappointments that follow, when one builds a good house and after moving in finds the pleasure of occupancy spoiled by a poor job of plastering caused by the job being done by a cheap man they say:

"We make hard plaster, but don't you hire this 'cheap' man to put it on. We have made hard wall plaster for years and know that a cheap man can do poor work with our good material. He can't make 'pits' for that is impossible in hard mortar; he can't make 'map cracks,' for there is no shrinkage of material. He can 'skin the job' though, put on too thin a coat; he can neglect to provide a good clinch or key. He can retemper mortar after it has once set. All this will cause bad work. He can't make our mortar sift out. Our material requires water only."

In their specifications and instructions for use of hard wall plaster we are told that it is already mixed in the proper proportions and the only thing required is to add water.—*St. Louis Lumberman.*

What Gypsum Did for Grand Rapids.

GRAND RAPIDS, MICH., November 16.—The plaster industry has done much for the upbuilding of this city. When Michigan was yet a territory gypsum deposits were discovered on the west bank of the Grand river, near the city line, but it was not until 1841 that the deposits were tested, and it was found that they could be worked into a practical and profitable business. Warren, Granger and Daniel Ball were the pioneers in the development of the industry, and they began operations under the firm name of Granger & Ball in December, 1841. Forty tons were turned out the first week and sold at an average price of \$4.00 a ton. Henry R. Williams soon bought out Mr. Ball's interest and it was chiefly through his enthusiasm for the new industry that the article became known. Mr. Williams conducted the mill until 1858, when it passed into the hands of E. B. Morgan & Co. Since that time the gypsum industry has greatly increased. It was one of the natural resources that helped put Grand Rapids on the sound financial basis of to-day. The smaller manufacturers have now been absorbed and the industry here to-day is well within the control of the United States Gypsum Co. Hundreds of tons of the product are shipped to all parts of the country.

Will Start Their Own Town.

ROSWELL, N. M., November 14.—The new plant of the Acme Plaster Co., at Acme, a few miles from Roswell, which has just been completed, is one of the largest plants in the Pecos Valley. The buildings of the plant are substantially constructed. The mill is 300 feet long by 50 feet wide, and part of it is three stories high. Office, blacksmith shop, warehouse and stables have also been constructed and the company contemplates the erection of a town with a big store, schoolhouse, church and twenty or thirty neat cottages for the employees. The gypsum is near at hand, only requiring removal of a thin layer of dirt to be ready for the mill. The gypsum is soft and is easily ploughed up and removed to the mills. A Lawrence is superintendent in charge of the plant.

Manager H. H. Dodge Resigns.

FORT DODGE, IA., November 17.—H. H. Dodge, manager of the United States Gypsum Co., has resigned and has gone to Indianapolis, Ind., his former home. Mr. Farrington, who had charge of the Minneapolis office of the company, succeeds Mr. Dodge, and has already taken charge. Mr. Dodge resigned to look after his business interests in Indianapolis.

Arizona Gypsum Plaster Co.

DOUGLAS, ARIZ., November 15.—The Douglas Cast Stone Co. has changed its name to the Arizona Gypsum Plaster Co. The old name was a misnomer because the manufacture of cast stone building blocks is really a side line of the company's business and secondary to the manufacture of gypsum plaster. The company has also decided to double the capacity of its plant so that it will have an output of 100 tons and agencies will be established in Los Angeles and San Francisco to go after business in the larger cities of the West. Traction automobiles will be operated on a railroad track to bring the gypsum from the quarries, five miles from Douglas, to the mills in the city. A chemical analysis is said to show the material to be 97 per cent gypsum. W. M. Adamson is president and general manager.

Gypsum Prospecting with Difficulties.

JAMESVILLE, N. Y., November 17.—The gypsum prospecting of the E. B. Alvord Co. has thus far not been attended with success. On the hills near here a fourth shaft is being sunk. Three others have been put down but it was necessary to abandon them owing to trouble with the drills and rock. Several drill points remain in the holes from twelve to twenty feet below the surface. Harry Conklin, manager for the company, says that he is not discouraged and hopes to find valuable gypsum deposits.

Big Deal at Syracuse.

SYRACUSE, N. Y., November 15.—George W. Pack & Son, dealers in lime and cement, have purchased the Adamant Plaster Works at the corner of Teal Avenue and East Towpath, including the full equipment and formulas, and also the local plant of the National Wall Plaster Co. in Canal Street. The equipment of the Adamant Co. will be installed in the National Plaster Co.'s plant at once and George W. Pack & Son will begin the manufacture of plaster immediately.

New Plant Is in Operation.

CUBA, N. Y., November 15.—The new mill of the American Wood Fiber Plaster Co. has been completed and is already in full operation. The first plant of this company was destroyed by fire about six months ago. The new plant is much larger than the first and new and improved machinery has been installed.

Paragon Plaster Co. Incorporated.

ALBANY, N. Y., November 17.—The Paragon Plaster Co., of Jamaica, has been incorporated with a capital stock of \$50,000.00. The company will carry on a general contracting business. Directors for the first year are: John J. Bliss, of Jamaica, and George D. Brown and E. L. Merriam, of Scranton, Pa.

Sackett Co.'s New Plant.

FORT DODGE, IA., November 17.—Contractors have begun work on the new plant of the Sackett Plaster Board Co. The factory, which will be 200 x 40 feet, will be within a few hundred feet of the Mineral City mills of the United States Gypsum Co. The Sackett Co. has another plant in Michigan.

New Mill in Colorado.

LAMAR, COL., November 15.—The Roaring Forks Plaster Co., which a few months ago acquired a large gypsum quarry on Roaring Fork river near Glenwood Springs, is preparing to build a mill on the property.

Memphis Concern Elects Officers.

MEMPHIS, TENN., November 17.—Officers have been elected by the Memphis Fiber Plaster Co. as follows: D. S. Weaver president; W. R. Johnston, vice president; C. W. Stiver, treasurer; F. D. Graham, secretary and manager.

Wm. Wirt Clarke & Son, dealers in building materials, Baltimore, Md., write Rock Products that the Rock Wall Finish manufactured by the Standard Lime Co., at Gibsonburg, Ohio, is proving satisfactory.

Clay.

Utilizing the Waste Products.

In every industry in the country one of the problems, the solution of which would result in profit has been and is to-day, the disposal of the waste products. It is a well known fact that properly utilization of waste products has added to the profit of many plants in various industries. Now comes forward a company to solve the problem of disposing of the pottery waste. The Ceramic Brick Co. has been recently incorporated at Steubenville, Ohio, by Judge Kerr and Ross D. Stark, and they hope to realize handsomely from the enterprise. Contracts have been made with nearly every pottery plant in the vicinity to purchase all the waste product at a uniform price, and they will make fine ware of it. All the waste bisque, sagger shreds, broken glaze, stilts, pins, wads and "knocker clay" that heretofore has been a dead loss, will now return a profit.

Other pottery makers would do well to look into this question of disposing of the waste products of their plant. There may be a fortune for the man who solves the problem to the best advantage. At any rate the waste products might bring in a small profit and "every little bit helps."

Clay Working Industry Statistics.

Interesting statistics on the clay working industries of the United States for 1905 are given in the bulletin by Jefferson Middleton, of the U. S. Geological Survey, as an advance chapter of year book on the mineral resources of the United States. Tables given in the bulletin show that the value of marketed clay products in 1905 was \$149,697,188.00 as compared with \$131,023,248.00 in 1904, a gain of \$18,673,940.00 or 14.25 per cent. Next to 1899, when the gain over 1898 was 28.61 per cent, the increase in 1905 over 1904 was the largest recorded since the statistics have been kept.

Of the total for 1905, the materials which enter into the structural and engineering arts were valued at \$121,778,294.00, or 81.35 per cent, while the pottery, or finer grade of goods, was valued at \$27,918,894.00, or 18.65 per cent. These relative proportions have been maintained for a number of years.

Every state and territory in the Union is a producer of clay products. Of the various states 37 showed gains in 1905 over 1904, while only eleven showed losses. In the matter of production Ohio ranks first, with a total of \$28,303,039.00. Pennsylvania, New Jersey, New York, Illinois, Indiana and Missouri follow in the order named.

Plant Equipped with Martin System.

The illustration on this page shows the dryer building at the plant of the Egg Harbor (N. J.) Brick Manufacturing Co. As the brick are made they pass from the machine room to the dryer by means of a "Martin" conveyor, shown in the illustration, which facilitates their transportation through a "Martin" stiff mud brick dryer. As the brick come from the stiff mud machine they are taken by means of an endless belt on a roller conveyor, which is also shown in the picture, through the entire length of the dryer. As the green brick enter the dryer they are packed in their proper spaces, the brick drying over night. It is claimed that the "Martin" system of manufacturing, handling and drying brick is labor-saving and the employment of skilled labor is avoided. The plant was equipped by the Henry Martin Brick Machine Manufacturing Co., Lancaster, Pa.

Will Ask for Higher Wages.

NEWBURGH, N. Y., November 15.—President Charles Hank of the International Brick, Tile and Terra Cotta Workers' Alliance, who organized the Hudson river brickmakers into unions last spring, says that the workmen are preparing to renew demands for higher wages next year.

Fire Destroys Columbus Plant.

COLUMBUS, OHIO, November 15.—The plant of the Columbus Pottery Co., at Chaseland, was recently destroyed by fire with a loss of \$70,000.00. The plant was insured for \$10,000.00. In the shipping room \$40,000.00 worth of goods sold and ready for shipment were destroyed. The rest of the loss was divided \$10,000.00 on contents and \$20,000.00 on building. The company has a capitalization of \$150,000.00. Owen Hardage, of West Jefferson is president; J. T. Gratigny, vice president; J. J. Schwartz, secretary, and A. S. Davis, treasurer.

Big Manitoba Clay Concern.

WINNIPEG, MAN., November 13.—Western Fire Clay Products, Limited, has filed a notice of incorporation here. The capital stock is \$600,000.00 and the incorporators are: Herbert W. Hollis, C. S. Tupper, J. A. Stevenson, Walter F. L. Edwards and Charles A. Allen, of this city. The purpose of the organization is to engage in the manufacture of clay products.

Pioneer Fire Clay Man Dead.

CANAL DOVER, OHIO, November 9.—Phineas Arnold, the pioneer fire clay products manufacturer of this section of the state, died at an early hour this morning. He was born in England, came to America in 1871 and to Canal Dover, in 1874, to operate the first fire brick plant in the Tuscarawas valley, a small three-kiln plant situated between this city and New Philadelphia.

He afterwards became associated with the Dover Fire Brick Co., which had its main offices in Cleveland, and was superintendent of the plant until last January, when he was retired by the company with full pay for life.

The Sloux City (Ia.) Brick and Tile Co. has filed renewed and amended articles of incorporation. The capital stock is \$200,000.00.

Tacoma and Seattle report a great scarcity of fire brick and building brick.

Rose & Relilly, brick manufacturers of Newburgh N. Y., have purchased property near Athens, Greene County, N. Y., and will erect a large brick plant.

Thomas Brown, of Beaumont, Tex., C. W. Price and J. N. Owens, of Roseville, Ohio, and Wilson Winters and M. G. Calhoun, of Crooksville, Ohio, will erect a pottery plant at Roseville, Ohio, and manufacture stoneware and clay specialties.

The Chaska, Minn., brick yards have closed down for the season. During the year four yards turned out an average of 350,000 bricks a day.

The Columbus Clay Products Co. has been incorporated at Columbus, Ohio, by Henry Gumble, Nathan Gumble, A. L. Nichols, A. H. Harmon, J. M. Elliott and Thos. Newell. They will deal in clay flint wall plaster, etc. The capital is \$1,000.00.

Town That Makes Pottery.

For at least 900 years the town of Chingtechen, in China, has been devoted to the making of pottery. Walter Clennell, a British consul, describes the place. He says that everything in Chingtechen belongs to the porcelain and earthenware industry.

The houses are of the most part built of fragments of fireclay that were at one time part either of old kilns or of the fireclay covers in which the porcelain is stocked during the firing. The river bank is for miles covered with a deep stratum of broken chinaware and chips of fireclay, and the greater part of the town and several square miles of the surrounding country are built over or composed of a similar deposit.

Chingtechen is unlike anything else in China. The forms, the color, the materials used in the buildings, the atmosphere are reminiscent of the poorer parts of a civilized industrial center. There are 104 large pottery kilns in town. The greater part are in use only for a short season of the summer. During the busy season of population of Chingtechen rises to about 400,000 souls, but of the total nearly half are laborers drawn from a wide area of country, who come for the season, live in rows of barrack-like sheds and do not bring their families with them.

Visitors to Chingtechen pass along street after street where every shop is occupied by men, women and children, all engaged in the designing, molding, painting or distributing of pottery. Potters' sheds, where the clay is mixed and molded on the wheel, are innumerable. The river bank is crowded for three miles by junks either landing material and fuel or shipping the finished product. —Shanghai Times.

E. C. Atkins & Co., proprietors of the Shemeld saw works, Indianapolis, Ind., have added an analytical department and are prepared to analyze specimens of clay, etc.

The Mack Manufacturing Co., of Philadelphia, has issued an interesting booklet, "Vitrified Brick and Block Pavement," that will be sent to any one seeking information on the subject.

The Ohio Face Brick Co., of Pittsburg, with plant at Jeffers County, Ohio, has been incorporated with a capital stock of \$300,000.00. E. B. Wolff, of Pittsburg, E. R. B. Martin, of St. Mary's, W. Va., F. D. Miller and J. Klinefelter, of Alliance, Ohio, and Charles Swisher, of Charleston, W. Va., are the incorporators.

The Millsdale Pressed Brick Co., of Joliet, Ill., has been re-incorporated and will reopen its brick yards in the spring.

B. H. Bransford, the leading brick and tile manufacturer of Western Kentucky, died recently at his home in Fulton, Ky. He was sixty years old.

Lehigh University received a bequest of \$122,000.00 from Frank Williams, who died at the age of thirty-five years. He established many of the fire brick plants in Western Pennsylvania.



MARTIN CONVEYOR IN ACTION.

For the Retailer.

The National Builders' Supply Association.

Meets Semi-Annually.

OFFICERS:

GORDON WILLIS.....	President.
St. Louis, Mo.	
H. C. GODFREY.....	Vice President.
Bridgeport, Ct.	
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HARRY S. WEST.....	Secretary.
Toledo, Ohio.	

Official Organ, ROCK PRODUCTS.

Annual Meeting at Columbus.

The Executive Committee of the National Builders' Supply Association announces the eighth annual convention to be held at Columbus, O., February 5, 6 and 7, 1907. The headquarters of the convention will be at the Southern Hotel, where ample accommodations have been provided for the comfort of all who propose to attend the convention.

The local organization of dealers, of which Mr. Frank Hunter is the president, and of which every man interested in the business is a member, has appointed active committees who are now working out plans for the entertainment of the visitors. A royal welcome to the capitol city of Ohio is extended by local members of the trade and all the commercial bodies of the city have pledged their co-operation to show a royal time to the members of the Builders' Supply Association.

Columbus is a city accustomed to holding great conventions, the hotel accommodations are unsurpassed, and being located right in the center of the great Middle West, there is no doubt that the greatest convention ever held will be that of 1907.

The manufacturers of all kinds of materials will participate in the occasion, and it is likely that a large number of exhibits will be offered for the inspection of the dealers, so that there will be a feature which amounts to a great fair of the manufacturers showing off their wares to their customers.

As usual the ladies are invited, and the program will contain social features for their entertainment. Secretary Harry S. West, of Toledo, is now busy preparing a program which will be printed in a later issue of Rock Products. Keep your eye on this column for further announcement.

Pretty Good Demand.

WICHITA, KAN., November 16.—J. H. Turner is a wholesale and retail dealer in building materials and in addition carries a complete line of concrete machinery and molds. He also has a plant for the manufacture of concrete blocks, and is erecting several warehouses and residences in Wichita and near-by towns. He says that the demand for concrete blocks has been brisk during the past season. He says he has every reason to believe that the business is growing. He uses a Miles machine and cement molds of his own and keeps four men busy making blocks.

Supply Dealer Busy.

LAWRENCE, KAN., November 18.—A. J. Griffin, dealer in builders' supplies, reports business as good and says that the past season has been one of the best he has ever experienced. He says that Lawrence is having a steady growth, and that as a consequence, builders have been busy, and while no large buildings have been erected a number of small store houses and residences have been built.

Rock Island Lumber and Coal Co.

WICHITA, KAN., November 16.—Thomas Arnold, manager of the Rock Island Lumber and Coal Co., says that the past season has been exceptionally good, and that on the whole he has no complaint to make, except that his company has been



JAMES G. GOFF, PROVIDENCE, R. I., PROMINENT DEALER, AND FORMER VICE PRESIDENT OF BUILDERS' SUPPLY ASSOCIATION.

short of material and at times unable to fill orders as quickly as he would have liked to. The company handles building supplies at all of its depots in Kansas and Oklahoma Territory, and is one of the largest concerns in the West of its kind. Mr. Arnold says the local business has been exceptionally good, because of the fact that Wichita has been erecting many large buildings.

Have Rebuilt the Plant.

FT. SCOTT, KAN., November 14.—The Kansas City and Ft. Scott Cement Co. manufacture the well known Ft. Scott hydraulic cement and also conduct a retail establishment where they handle all kinds of builders' supplies. Chas. H. Gardner, superintendent, says that the past season has been the largest they have ever had. The Ft. Scott hydraulic cement plant burned down early in the season and has only been re-built within the last few weeks and operations have been resumed.

Plenty Doing Still.

LAWRENCE, KAN., November 16.—Trevillo & Krieder are dealers in lumber and builders' supplies at the corner of Massachusetts and Berkeley streets. J. W. Krieder in speaking of the past season's business says that it has been up to his expectations, except that at the present time they are unable to secure shipments of materials rapidly.

Busy Kansas City.

KANSAS CITY, Mo., November 16.—The C. A. Brockett Cement Co. are manufacturers and agents. They handle Ash Grove and other standard white limes, Fort Scott hydraulic cement, Louisville, English, German and American Portland cements, plasters and building materials. The officers of the company are Mr. C. A. Brockett, president, and Mr. Howard McCutcheon, secretary. Their offices are located at 121 West Eighth Street.

Mr. McCutcheon in discussing the present situation said that Kansas City had been enjoying a period of unwonted activity along building lines, and that the demand for all kinds of materials had been very steady, owing to the immense amount of building which had been going on in Kansas City. Few cities in the West are growing as rapidly as Kansas City. Several sky scrapers have been erected, and others are in course of construction. The outlook is extremely bright, and while the labor situation is very acute, still Kansas City has been able to go ahead with its building operations unabated. There has been but one complaint of any magnitude during the season and that has been a shortage of material. The demand has steadily exceeded the supply all during the summer. However, Kansas City has been fairly well supplied with cement in comparison with other cities.

The Lynch-Watkins Lime and Cement Co., whose office and warehouses are located at Nineteenth and Walnut Streets, are agents for the well known Kansas Portland cement, Lehigh, Milwaukee, Fort Scott and Louisville cement, and Agatite cement wall plaster, and other building material. Mr. John P. Lynch says that the past season has been one of the greatest in the history of his concern. The only trouble has been to secure material. There has been a great deal of building going on, but street work has been slack. Reinforced concrete construction is gradually finding favor with good architects in Kansas City and several large warehouses have been erected during the past season. Mr. Lynch says that the dealers' margin in cement is not large enough, and he looks for a change in conditions along these lines before long. He said that during the past season he was forced to turn down orders for upwards of 75,000 barrels of cement, that Kansas City was a good market for cement, but that the demand had far exceeded the supply. He said also that he believed that cement was as high as it was going to get, and that the increased production would have a tendency to hold the prices at the present figure for some time. Most of the mills in the West had suffered for a lack of cars to ship their material in, and that they would go into the spring with a large stock of cement on hand. There was hardly a plant in the West whose storage capacity would not be taxed to its utmost by spring.

The Halliwell Cement Co. are manufacturers of Fort Scott hydraulic cement and dealers in builders' supplies of all kinds. Their offices are located at 312 East Ninth Street, and their warehouses at the foot of Fourth Street viaduct. When asked about the condition of the trade at present, they said they had been very busy during the past season, and had but one complaint to make and that was general shortage of materials of all kinds. This of course is attributable to the fact that the manufacturers could not get cars, owing to the heavy movement of crops and the general inadequacy of railroad equipment. They said that Kansas City was doing as much, if not more building than any city of its size in the United States today and that the outlook for a large business in the spring was extremely flattering, as quite a number of large buildings was contemplated for next season.

Erected Several Residences.

KANSAS CITY, KAN., November 17.—E. E. Venard is a dealer in all kinds of building materials, and manufactures concrete building blocks and bricks. They have erected many beautiful residences with their cement building blocks, and report the past season as having been satisfactory. Their plant is located at Thirteenth and Northwestern Railroad.

Their Business Growing.

KANSAS CITY, KAN., November 17.—The Kaw Valley Lime, Cement and Coal Co., dealers in builders' supplies at 713 Minnesota avenue. They report the past season as being one of the best in their history. H. S. Royer is manager.

Progressive Indiana Concerns.

NORTH VERNON, IND., October 31.—One of the progressive concerns in this section is the North Vernon Pump and Lumber Co., which is at present a partnership consisting of E. A. Platter, F. M. Platter, C. E. Platter and F. M. Howell. Mr. Howell has charge of the construction department and Mr. F. M. Platter attends to the office end.

They have had a most prosperous season, especially with Sackett Plaster Board, of which over 60,000 feet have been sold. They have a stock at all times of United States Portland cement, Mitchell and Woodville, Ohio, limes, and plaster manufactured by the Grand Rapids Plaster Co., Grand Rapids, Mich.

The firm was organized in 1895, and expect during the coming year to incorporate the company and extend the business. Concrete construction will be one of the new branches that will be taken up and owing to the energy of all the members of the present business, this should be a success.

Another prominent firm in North Vernon, is that of Miller Bros., builders and handlers of builders' supplies. This firm has been in existence since 1901, and the volume of business in both building lines and the handling of U. S. Gypsum Co.'s plaster, Castalia Portland cement, lime from both the Mitchell Lime Co., and Speed Cement Co., has increased steadily.

Prosperity in Ohio.

DAYTON, OHIO, November 10.—The leading dealers in builders' supplies here is the firm of Eichelberg & Sons, Fifth and Pearl Streets, where there is carried at all times a full line of materials.

Atlas Portland cement, Norse & Christian's, Marion, Ohio, lime, Grand Rapids plaster and American sewer pipe. This firm also carries a complete line of fire brick, notably that of the Robinson Clay Products Co., Akron, Ohio, Stowe-Fuller Co., Cleveland, Ohio, and the Union Mining Co., Mt. Savage, Md.

The Messrs. Eichelberger have had a most prosperous season, and the outlook for spring trade is most promising.

Lack of teams in order to enable prompt delivery of their numerous orders is the only complaint of Schaffer & Gengnagel, who have an immense building material warehouse at 812 to 828 East First Street. They carry fire proof lathing of the General Fireproofing Co., Youngstown, Ohio, Grand Rapids plaster, Robinson Clay Products Co., Akron, Ohio, firebrick, American Sewer Pipe Co.'s sewer pipe, and the Castalia, Lehigh and Vulcanite Portland cements. Business has been of the profitable kind with the best of prospects for a continuance of the same.

Another Busy Man.

ST. LOUIS, MO., November 16.—P. J. Dauernheim, president of the Chas. W. Goetz Lime and Cement Co., said that the past season had been the largest in the history of their business. This is one of the oldest concerns of the kind in the city and its trade reflects to a great extent the building operations of the city.

Great Facilities for Handling Supplies.

ST. LOUIS, MO., November 16.—Gordon Willis, of the Hunkins-Willis Lime and Cement Co., says that their past season's business has been satisfactory, in fact they have been unable to meet the demands which have been made upon them owing to the shortage in material. They have erected three big warehouses in different parts of the city to facilitate the handling of materials and save time in delivery. Mr. Willis says they have increased their lime kiln capacity 100 per cent in the last year. He says the local business is probably only one-third of their operations. They practically control the output of quite a number of plants, and have trade in nearly every state. He says the past season's business as far as St. Louis is concerned has been large, but they were somewhat handicapped by the shortage in several lines of material.

Has Had a Large Trade.

ST. LOUIS, MO., November 15.—The Glencoe Lime and Cement Co. has an office and warehouse at 1400 "A" Old Manchester Road. They are dealers in lime, cements, plasters, builders' supplies, and Ricketson's mortar colors. C. W. S. Cobb, president of the company, said that the season's business had been exceptional in many respects. St. Louis has been enjoying the most

remarkable prosperity of any city in the West, and it is estimated that there are \$25,000,000.00 worth of buildings being erected in the downtown districts alone, to say nothing of the warehouses in the manufacturing section. Prices have ruled firm in all lines, and Mr. Cobb says that prospects for a continuation of the same conditions are flattering. Many large buildings are contemplated for next season, and the only complaint Mr. Cobb could make was he was not able to secure shipments as rapidly as he had desired them. They have the contract for furnishing the cement for the Butler Bros. Building. This will be of re-inforced concrete and it is estimated that it will require in the neighborhood of 60,000 barrels.

Best Season He Can Remember.

KANSAS CITY, KAN., November 17.—A. R. James & Son are dealers in building material and operate a small quarry for rubble and crushed stone. Their office and warehouse is at the corner of Fourth and State streets. Mr. James says for the past season business has been unquestionably the best he can remember. He says there has been considerable building going on in Kansas City, Kan., and that the demand has been great for all kinds of building material. Mr. James is also interested in the Milan concrete wall building device. This is not a block machine but a device for the manufacture of a concrete wall by the wet process. He has erected several buildings and churches in Kansas City, Kan., which have given entire satisfaction. This wall building device is a simple proposition and does not require any skilled labor.

Business Picking Up Again.

KANSAS CITY, MO., November 18.—The Bryant Supply Co., dealers in building material, with offices in the Bryant Building, has warehouse and yards are at Twentieth and Forest avenue. They carry a complete line of builders' supplies, including Indian Portland cement, Ash Grove white lime, Texas cement plaster and Monarch cement plaster. Charles J. Bryant, president of the company, says that business has been picking up now that the election is over. He says that the re-inforced concrete proposition is meeting with favor and several large warehouses have been erected here during the past season. He looks for some of the large contractors and architects to take up the proposition before long.

Mr. Bryant says among the new buildings soon to be erected, will be the new National Bank of Commerce, which will be fifteen stories in height.

Can't Meet the Demand.

KANSAS CITY, MO., November 18.—Aetna Cement Plaster Co. has a plant at Swayne, Kan. It is a four-kettle mill with a capacity of 80 tons a day. A vein of gypsum rock 16 to 18 feet in depth is reached by shafts 65 feet from the surface. There is a large deposit of gypsite. The general offices of the Aetna Cement Plaster Co. are at 312 E. Ninth in Kansas City, Mo. D. P. Thomas is president, E. P. Halliwell, secretary, W. S. Halliwell, treasurer. Swayne is about 175 miles west of Kansas City. Mr. Thomas says that they have been running the mill to its capacity but are unable to meet the demand.

Business Brisk in Kansas.

TOPEKA, KAN., November 16.—J. Thomas & Son, dealers in lumber and builders' supplies here, have yards in 18 other cities in Kansas. They are among the largest dealers in the state and report business as being brisk in all their lines.

The Hayden Automatic Block Machine Co., of Columbus, O., has recently opened a branch office in St. Louis, Mo., in room 415 Real Estate Building, 821 Chestnut street. James McD. Hunter is manager.

The Austin Manufacturing Co. has just closed a contract with the Tennessee Coal, Iron and R. R. Co., of Birmingham, Ala for delivery before January 1 of five of their No. 8 Gyrotory Crushers which they will use for crushing ore. This is one of the largest sales of crushers this year and the Austin company thinks it is an evidence of the esteem in which their machine is held.

Business Crippled by Car Shortage.

WICHITA, KAN., November 17.—The Jackson-Walker Coal and Material Co. has offices here at 112 South Market street. L. C. Jackson is president, G. T. Walker, vice-president, and John A. Parkinson, secretary. They are dealers in all kinds of builders' supplies and Iowa Portland cement, and Acme cement plaster. Owing to the shortage of cars in the West they have been unable to procure materials fast enough to fill their orders, and as a consequence their business has been crippled during the past season.

Mr. Walker is also connected with the Wichita Silix Brick Co., which manufactures sand-lime brick. They use the American system, two cylinders, and have been turning out about 30,000 brick every twenty-four hours. They have been running three eight-hour shifts and steam two cylinders full of brick a day. Mr. Walker says that they have discarded their drier, as they have not found it necessary in the manufacture of sand-lime brick. This is contrary to the general belief that sand-lime brick can not be made unless the materials are thoroughly dried. However, Mr. Walker says that since he has discarded his drier he has made a better brick than ever before.

Another Car Shortage Complaint.

WICHITA, KAN., November 16.—The Schwartz Lumber and Coal Co., dealers in building materials, report an active season. They sell Iowa Portland cement and Ash Grove, Rogers and Ozark limes. They look for a continuation of their good trade as many buildings are either in the course of erection or in contemplation. Owing to the fact that they have been unable to secure their materials when they were ordered, for the reason of the general shortage of cars in the West, their business has been somewhat handicapped.

The Tehachapi Portland Cement Co. has been incorporated at Portland, Me., with a capital of \$5,000,000.00. The president is M. W. Baldwin, and the treasurer, C. E. Eaton, both of Portland, Me.

The Commercial Cement Co., with a capital stock of \$150,000.00 has been incorporated at Winnipeg, Man. The incorporators are: Otto Babcock, Warren B. Wood, James D. Bell, Arthur S. Dinnie, of Grand Forks; George E. Towle, Karl J. Farup, Clinton D. Lord, of Park River, North Dakota, and William P. Aslip, of Winnipeg.

W. H. Flynn, purchasing agent for the Alma Cement Co., at Wellston, O., died suddenly of heart failure November 12.

The Northwestern Portland Cement Co., of California, has appointed Clinton W. Howard, of Bellingham, Wash., as its sole agent in that state.

F. F. Park, who for the past three years has been superintendent of the Cayuga Lake Cement Co.'s Plant, at Portland, near Ithaca, N. Y., has resigned, and is now connected with the Standard Portland Cement Co.'s plant at Napa Junction, Cal.

Arthur Clifford Babson, of the old firm of Sinclair & Babson, the first importers of cement into this country, died November 9 at his residence, Stonycroft, on Ridgewood Road, South Orange, N. J. Mr. Babson was born in Boston in 1848 and retired from active business in 1903. His wife and five sons survive him.

Work has begun on the new plant of the Lehigh Portland Cement Co., near Belleville, Ont., which when completed in 1907, will have a 5,000 barrel daily capacity.

Los Angeles Artificial Stone Co., Los Angeles, Cal., has been organized with a capital stock of \$25,000.00. The directors are: Dan Pitzel, Peter Bruttig, M. J. McGarry, Alexis J. Sowinski.

The Chardon Concrete Manufacturing Co., of Chardon, Ohio, has been purchased by Charles Wallers, the former owner of the Builders' Supply Co.

The Narragansett Cement Stone Manufacturing Association has been chartered at Trenton, N. J., with a capital of \$100,000.00. Martin P. Devlin, agent, East State Street.

The Dixie Portland Cement Co. expects to begin work this week on a plant near South Pittsburg, Tenn., which will have an initial capacity of 2,500 barrels a day. The officers are: George E. Nicholson, president; A. B. Cockerill, vice president; Richard Hardy, secretary; L. L. Northrup, treasurer.

Side Talk.

The illustration on this page is a picture made of the largest tube mill that has ever been built. The mill measures 6 feet in diameter by 24 feet long inside. It was built by the J. R. Alsing Co., of New York, for T. B. Floyd, of Binghamton, N. Y., and shipped to New Hampshire to pulverize feldspar.

The novel feature of this tube mill is the peculiar method of driving the mill. The mill is balanced on wheels which revolve, and thus the mill has to revolve. The J. R. Alsing Co. have patented this device here and in Europe. It is certainly gratifying for a firm that has introduced these tube mills into the United States, to also have the pleasure of stating that they built the largest tube mill in the world.

The J. R. Alsing Co., the mother concern of the tube mill business in America, claims that they have introduced the first Pebble mill (as they were formerly called), in the cement trade. They have also been the first to introduce these tube mills in the mining trade, although in the thirty-seven years that the J. R. Alsing Co. has been building these machines, a good many other concerns started to build them, which shows that though an old concern, they are keeping steps with the times, and are always able to offer the latest improvements of machinery in their line.

The Ruggles-Coles Engineering Co. with offices both in New York and Chicago, reports sales of drying machines during the month of October to leading dealers in the Indian Territory, Illinois, Iowa, Tennessee, Pennsylvania, New York and Cuba.

The United States Drying Engineering Co., of 66-70 Beaver Street, New York, has just issued catalogue No. 3. They will be pleased to furnish them to the trade upon request.

One of the most attractive catalogues that have reached the office of Rock Products recently is the Pulverizer Catalogue of the Jeffrey Manufacturing Co., of Columbus, Ohio. The catalogue is attractively gotten up and presents a neat appearance from cover to cover. It is filled with cuts of the various machines manufactured and specifications explaining each of them.

Among the various improvements that have been made in the manufacture of hollow concrete building block machines, one of the most important is the flexibility in machines so that different sizes of block as well as different shapes and thicknesses can be made. The accompanying illustration represents one of these machines which has just been patented and is called the "Multiple Automatic." The chief excellence claimed for this machine is



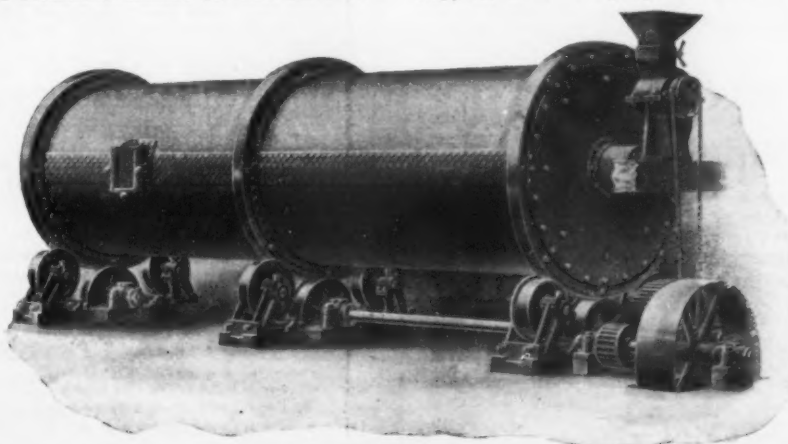
PALMER BLOCK MACHINE.

its adaptability to innumerable changes. It is said that there is no design which an architect is likely to call for that this machine can not make. Its flexibility is said to be so great that one, two, three or more blocks can be made at one time, of any shape and thickness with any number of air spaces. One movement of a lever opens and closes the machine.

Owing to the interest which many of the devotees are taking in the developing of this new industry five or six of the largest and most progressive companies in this line have just been practically merged into one called "The United Cement Machinery Co.," with Harmon S. Palmer, president of the Palmer Co., at Washington, D. C., as president; James F. Angless, president of the Winget Co., of Columbus, Ohio, as first vice president; James W. Sanderson, president of the Cement Machinery Co., Burlington, Iowa, second vice president and general manager; James M. McDowell, of Columbus, Ohio, secretary, and Howard C. Black, general counsel. With the experience of these promoters and the number of factories and offices, together with the numerous patents which they control, this company should be a powerful factor in the hollow block and cement industry of this country.

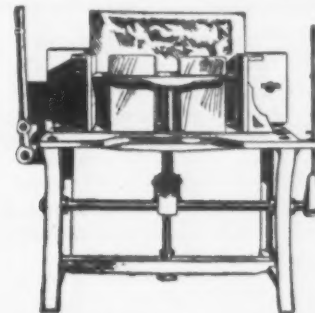
The Allis-Chalmers Co., of Baltimore, Md., has just closed a contract with the State penitentiary of Virginia, to install a plant at the State farm about 28 miles from Richmond, on the Chesapeake and Ohio. The plant will have a capacity of 300 to 400 tons a day, and will not only furnish stone for the farm but will also sell to contractors. Every type of crusher was represented in the bidding and the Gates was selected by a committee of six representative citizens, one of whom was a contractor, a user of crushed stone and crushers. The committee also had the benefit of the assistance of a consulting engineer.

The Universal Portland Cement Co. has placed a large order with the Kent Mill Co. for pulverizers for their new plants at Buffington, Ind., and Pittsburg, Pa. The Kent Co. reports a big demand for their pulverizers. Many of their customers who are enlarging their plants have ordered additional Kent mills and several new companies have adopted the Kent mill. The Chicago Portland Cement Co. have ordered several Kent mills for the addition which they are building to their plant at Oglesby, Ill., and the new cement plant at Mason City, Ia., is to be equipped with Kent mills.



J. R. ALSING CO.'S TUBE MILLS.

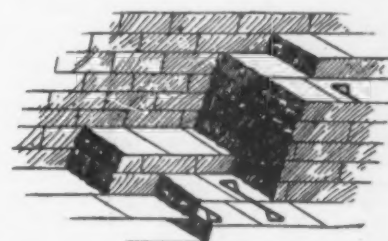
The Wichita Coal Material Co., of Wichita, Kan., has been selling a number of their machines recently. In order to meet this increased demand they have moved their factory and now have a much larger capacity and are better enabled to fill their orders. They are manufacturers of the well known Reed machine, which is very popular all over the South and Southwest. However, it is only a recent thing for them to get into the Eastern territory. Machines have been placed in Indianapolis and Peoria, Ill., but the bulk of their



REED BLOCK MACHINE.

machines have been shipped to the West, and only last week they made a shipment to California and another to New Mexico. E. W. Ellison, of Peoria, Ill., reports that he was able to make 210 blocks a day on their Reed Junior down face machine, size 8x10x18 inches, with extra face, working three men to mix their own material.

The Cincinnati Wall Tie Co. is selling a wire wall tie to the amount of 200,000 a month and the business prospects for the coming year are that they will double this record. William H. Geis, president and general manager of the company, says: "Our business is more than satisfactory. We have just shipped the Foster Hardware Co., of Little Rock, Ark., 10,000 and the government



sends an order every now and then. We have probably furnished Uncle Sam with 3,000,000 ties. There is not a straight pull in the tie and it is so simple that it is practical." An illustration of the tie is shown here.

Wm. Wirt & Son, of Baltimore, Md., dealers in building supplies, are seeking information in regard to the manufacture of stoves for drying sand.

The Montreal Sand and Gravel Co., Limited, general contractors, has been incorporated at Ottawa, Can., with a capital stock of \$100,000.00.

The Union Sand and Gravel Co., 614 Taylor Street, St. Louis, Mo., will erect a one-story concrete warehouse at a cost of \$9,500.00.

The H. & G. Ruck Gravel Co., of Milwaukee, has been having trouble with burglars, having had three visits within a month. On the last visit the private books of the company were torn to pieces.

The Fort Pitt Sand and Gravel Co., of Pittsburg, Pa., has been incorporated with a capital stock of \$30,000.00.

A 55 foot vein of sand, it is said, has been discovered on the farm of W. H. Pursell in Saline County, Ark.

The Vicksburg Gravel Co., of Vicksburg, Miss., has been incorporated with a capital stock of \$50,000.00. W. H. Fitzhugh, Alex Fitzhugh and W. S. Jones are incorporators.

Sand and Gravel.

The Sand of the Missouri.

A river of sand rolls past Kansas City. The bottom of the Missouri river from the mountains of the Northwest to where it empties into the Mississippi, is one rolling, shifting bed of sand, ever moving slowly onward to the sea.

If you were to go down in a diving suit to the river bottom you would see this sand constantly moving down stream, rolling over and over in the current. Opposite Kansas City this sand that forms the river bed is fifty feet deep in places. But it is not always the same depth at the same place. It is continually shifting exactly as sandbars shift upon the shores in the treacherous current.

This sand comes from erosion of the mountain rocks. No one knows or can guess how many years ago the sand now drifting past Kansas City was on its long journey from the mountains. It may have started many thousands of years ago. It may have been halted upon the way for hundreds or thousands of years. The "Big Muddy" has a trick of dumping a few million tons of sand by the wayside and leaving it there for years. But the river always claims and takes it again sometime.

It is all a part of the tearing down and building up plan of this mysterious old earth. Eventually the sand will be deposited upon the floor of the Gulf of Mexico, forming a vast plateau that sometime, by some great convulsion of nature, will be uplifted from the waves and form a fertile continent. This river of sand has helped to build Kansas City. Wherever you see a bit of concrete or street paving or cement work there is sand from the river in it.

Along the river front of Kansas City are 350 acres of level, drifting sand. The sand is from twenty to fifty feet deep all over the 350 acres. There are millions of tons of sand there and every grain of it was pumped from the bottom of the Missouri river. There are two boats which work day and night pumping sand upon the land that is being reclaimed from the river. From the pump upon the boat the sand and water is forced through a long iron pipe and is discharged upon the land. In this way the 350 acres has been reclaimed from the river. The land is owned by the Armour-Swift interests. It is worth \$30,000.00 an acre now.

The water of the Missouri river where it flows past Kansas City averages twenty feet in depth and the current is very swift. Anchored 100 feet from the shore are the pump boats and sand barges. They have powerful engines and pumps and long steel pipes that are lowered to the bottom of the river. The nozzle of the pipe sinks into the sand and the pump sucks it up. The sand that is sold for building purposes runs out into a scow. The sand fills the scow, the water rising and running over the edges until the scow is full of sand. Then the barge is towed to the bank, a system of buckets upon an endless belt running up a long crane scoops the sand out, carries it up and dumps it in a pile upon shore where wagons can get at it.

For years and years, day and night, the pumps have been steadily sucking up sand from the river bottom. But the quantity never lessens. There is always a mass of it rolling and drifting slowly onward and the current quickly fills up the depression made by the pump nozzle.

Beneath the sand is a deposit of "gumbo" or hard clay, beneath that is a blue shale and next to that is the bed rock. The piers of the Winner bridge go through from 90 to 125 feet of sand and soil before they reach bed rock. There is more of each of the piers below ground than there is above.—*Kansas City Star.*

The Buckeye Sand Co., of Detroit, Mich., has filed articles of association with a capital stock of \$10,000.00. Charles A. Burke, James H. Walsh and Emil Moergell are incorporators.

Salt Lake Sand Formed by Plant.

Prof. A. Rothplatz, of Munich, Bavaria, who has recently visited Salt Lake City, has told the people of the Utah capital something that has surprised them. He has announced that the clean, gray sand lifted up by bathers from the floor of the Great Salt Lake, is not sand at all. He calls it oolite and says that it was not formed in the time-honored way stated by the text books on geology, but owes its existence to a lowly green plant known as alga. This is his version of the formation of this oolite:

"The alga grows on the surface of the water, and along the shore. Carbon dioxide is essential to its growth, and it gets this from the water. The water is thereby disintegrated, and the lime in it is deposited on the plant. In this way a crust of lime is gradually formed around the plant. After a while the plant decays and the lime falls to the bottom of the lake, forming a fine sand."

Professor Rothplatz studied this all out fifteen years ago but went to Salt Lake City recently to verify his theory. He thinks it has been verified and is now going back to Bavaria to confront scientists, who laughed at him fifteen years ago.

Price of Sand Is Boosted.

PENDLETON, ORE., November 15.—The price of sand in Pendleton and vicinity has been increased from \$1.50 to \$2.25 a yard and contractors allege that a trust has been formed. They are said to be making arrangements to secure an independent supply.

Will Pump Sand From Red River.

ALEXANDRIA, LA., November 16.—R. R. Russell and other business men of Alexandria, have recently purchased the steamer Wade and a barge, and have purchased a large pump to pump sand and gravel from the bottom of Red River. They have a contract to deliver 10,000 cubic yards of sand and gravel to Kahmann & McMurray, contractors, to build the Colorado Southern bridge across Atchafalaya River, twelve miles below Melville.

Waterproofing Sand Company.

NEW YORK, N. Y., November 17.—The Furnham Sand Blast Co. has been incorporated with a capital of \$15,000.00. The company will water-proof surfaces of brick, stone, etc. John W. Blakey, 15 William Street, A. E. Herrman, 123 West 127th Street, New York, and B. C. Furnham, of Bronxville, N. Y., are the incorporators.

American Silica Co.

DETROIT, MICH., November 15.—The American Silica Co. has completed its plant with a capacity of 400 tons daily. The company was formed by Dr. Dayton Parker, of Detroit, on whose farm the deposit of sand was found. The entire output of the plant has already been contracted for.

New Alabama Sand Co.

BIRMINGHAM, ALA., November 16.—The Savage Sand and Supply Co. was recently formed here for the purpose of developing land containing gravel, sand, stone and other minerals and to carry on a general business in these lines. The authorized capital of the company is \$20,000.00, but the company will start business with \$10,000.00. Officers and directors are: J. W. Savage, president; H. J. Falls, vice president, and James L. Davidson, secretary.

Cottdale Sand Co.

BESSEMER, ALA., November 16.—The Cottdale Sand Co., with a capital stock of \$3,000.00 has been formed here for the purpose of dealing in all kinds of moulding and building sands. The sand pits are at Cottdale. The offices of the company are here. Its officers are: J. F. Gallagher, president; Fred Clarke, vice president; J. D. O'Gara, secretary and treasurer, and Robert Jenkins, manager.

The Berkeley Springs Sand Co., of Morgan County, W. Va., has been incorporated with a capital stock of \$100,000.00. The company will quarry sand rock and sand, maintain mills to crush and dry sand, rock and operate tram and railroads. S. S. Janey and T. R. Wise, of Baltimore, W. C. Klier, C. M. Herbert and C. E. Williams, of Martinsburg, W. Va., are incorporators.

Wanted and For Sale

WANTED—POSITION.

BY COMPETENT MAN of good habits and careful business training. Experienced in cement and building material. Address T 2, care Rock Products.

WANTED—MACHINERY.

FIRST CLASS SECOND-HAND limestone quarrying and crushing outfit, by V. W. Panton, So. Elgin, Ill., quick.

WANTED—40 or 48x12 or 16 ft. screen. Address X1, care Rock Products.

FOR SALE—MACHINERY.

AT A BARGAIN—Three simplicity concrete block machines, one standard Sand and Machinery Co. mixer; one dry mixer with elevator, block tongs, fixtures, etc. Will sell as a whole or part. A good chance for any one desiring to enter the concrete block business. Good reasons for selling. CHAS. L. McNUTT, Manager, 114 Poplar Street, Jackson, Tenn.

CHEAP—1 Standard cement brick machine (40 mold).

One Standard concrete mixer.

1,312 brick holders, belts, shaftings, hangers and pulleys.

This machine is as good as new, has only made 50,000 brick. Inquire of H. HOUGHTON, Detroit, Mich.

ONE SECOND-HAND five foot gauge stone channeling machine. Also, sixteen second-hand two yard, two way dump cars three foot gauge. THE McDERMOTT STONE CO., McDermott, O.

ONE HERCULES BLOCK MACHINE, one Seaman brick machine. Pallets for both. Address Box 23, Jacksonville, Ill.

ROCK CRUSHER, ENGINE, BOILER, etc., situated at Rockview, on the Cotton Belt R. R., in Scott county, Mo. Apply to MR. CHAS. BLATTNER, or Sturdivant Bank, Cape Girardeau, Mo.

SMITH TUBE MILL SHELLS, three with sillex lining, 4x16 feet. All in A-1 condition. We offer the above for sale on account of rearrangement of our grinding department. ALMA CEMENT CO., Wellston, O.

THREE TUBE MILLS—Owing to changes in our mill room, we will have for sale three "Krupp" Sillex lined tube mills, 5x22 feet. Can make shipment about December 15, February 1, and March 15, respectively. Make best offer. NORTHAMPTON PORTLAND CEMENT CO., Stockertown, Pa.

WILL SELL CHEAP, OR EXCHANGE—For concrete block, one large continuous belt drive concrete mixer, in good order (Drake type) weight about 3,000 lbs. Capacity, 150 yards per day. Parties desiring to exchange give price on block delivered in Chicago. Address, A. O. WALWORTH, 15 S. Canal St., Chicago, Ill.

FOR SALE—PLANT.

WOOD FIBRE PLANT for the manufacture of wood fibre and other wall plaster, two up-to-date lime kilns, a complete Clyde system for hydrating lime, all new, a good business established in the best city in the South. Address, AMERICAN WOOD FIBRE PLASTER CO., Box 267, Birmingham, Ala.

BUSINESS OPPORTUNITIES.

GOOD RELIABLE PARTIES to establish a cement factory; good inducements will be offered to reliable parties. Address, J. W. SANFORD, Chamberlain, S. D.

CORE DRILLING FOR QUARRY AND MINERAL PROPERTY.

I am prepared to make complete investigations and reports. Write for Prices.

A. T. THROOP, Consulting Engineer,
NIAGARA FALLS, N. Y.

Just as Sure as the Sun Shines



You can save power, machinery, time and worry by using Nuttall Cut Gears. Interesting booklet explaining advantages of cut gearing over cast teeth, free upon application—number limited.

WRITE NOW.

R. D. Nuttall Company, Pittsburg, Pa.

Blue Rapids Gypsum Co.'s Mill

will start September 1st. Capacity two hundred tons daily. They have an eight-foot vein of Gypsum and will be ready to fill all orders quickly, as they have the best equipped mill in the country.

—ADDRESS—

Blue Rapids Gypsum Co.

BLUE RAPIDS, KANSAS.

THE CAPPON PROCESS

(CALCIUM CHLORIDE SYSTEM)

FOR MAKING

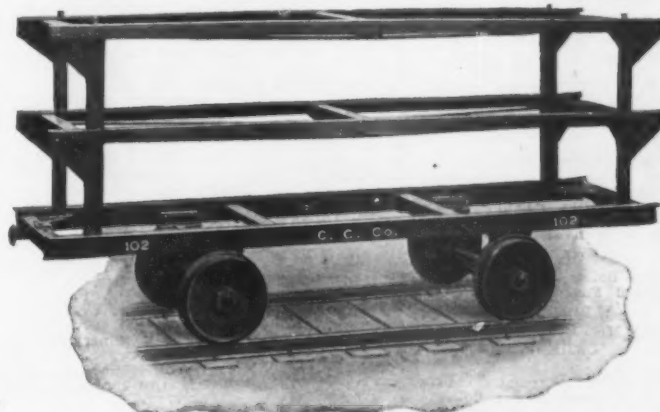
Hard Plaster, Artificial Stone and Marble, Etc.

Without the use of gypsum, is of interest to all lime manufacturers

THOMAS W. CAPPON, Patentee,
No. 881 E. 141 Street, NEW YORK.

Industrial Cars for all Purposes

Turntables, Portable Tracks, Switches, etc.



No. 102 CONCRETE BLOCK CAR

The Cleveland Car Co.,

WEST PARK, OHIO

Estimates Furnished upon Application.

New York Office, 5932 Metropolitan Building.

Philadelphia Office, 1202 Harrison Building.

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McMillan, W. & Son	1
Maness, T. F.	1
Manning, Maxwell & Moore	1
Main Belting Co.	1
Marquette Cement Mfg. Co.	1
Martin, Henry	41
Marvin Electric Drill Co.	6
McMillan, W. & Son	1
Meacham & Wright	5
Meyer, W. D.	41
Milwaukee Bag Co.	18
Milwaukee Monument Co.	1
Miracle Pressed Stone Co.	1
Mitchell Clay Mfg. Co.	16
Mitchell Lime Co.	6
Morgan Construction Co.	8
Morris-Sherman Mfg. Co.	1
Moulton, Dastin	1
Mulconroy & Co.	1
Municipal Eng. & Contracting Co.	1
Myers Stone Co.	1

Nash, A. L.	1
National Brick Machinery Co.	1
New Albany Wall Plaster Co.	51
New Albany Mfg. Co.	46
Newsome Crushed Stone Co.	46
Newaygo Portland Cement Co.	5
New York Consolidated Slate Co.	1
Niles-Bement-Pond Co.	1
Norris & Christian Stone & Lime Co.	7
Northampton Port Cement Co.	4
N. C. Granite Corporation	43
Nuttall, R. D. Co.	1

O'Brien, P.	1
Ohio Fiber Machinery Co., The	50
Ohio & Western Lime Co., The	7
Oklahoma Granite Co.	13
O'Laughlin, John	13
Oliver, Wm. J., Mfg. Co.	1
Colitic Stone Co., of Indiana	1
Osola, Jos. D.	1
Ottawa Silica Sand Co.	1
Ozark Cooperage & Lbr. Co.	18

Palmer, Harmon S.	46
Patch, F. R.	48
Pennsylvania Structural Slate Co.	41
Perfection Block Mach. Co.	46
Peerless Brick Machine Co.	49
Perry-Mathews-Buskirk Stone Co.	1
Pettyjohn Co., The	48
Pierce City White Lime Co.	41
Pirrie, J. K.	1
Pittkin Supply Co.	1
Pittsburg Crushed Steel Co.	1
Plymouth Gypsum Co., The	51
Power and Mining Machinery Co.	17
Pulsometer Steam Pump Co.	1

Raymond Bros. Co., The	9
Richards, John R.	1
Richardson Scale Co.	18
Richardson Mineral Paint Works	51
Rini Bros.	1
Rochester Lime Co.	8
Rock Island Ry.	1
Rowe, John A.	41
Rubberhide Co.	41
Ruggles-Coles Eng. Co. New York	18
Ruggles Mac Co.	1
Ruggles Granite Co.	1
Ruxton, George	1

St. Louis Portland Cement Co.	2
St. Louis Steam Engine Co.	1
Sickles, Geo. B.	1
Schneider Granite Co.	1
Scioto Lime Co.	7
Shaw Electric Crane Co.	1

Shepherd & Parker	14
Shoop, S. W. & Co.	18
Shurtz Fuller Mfg. Co.	51
Simpson Cement Mold Co.	1
Smith, F. L. & Co.	10
Smith, E. L. & Co.	1
Smith Bros Granite Co.	1
Soderstrom, J. A.	44
South Bend Machine Co.	44
Southern Roofing & Paving Co.	16
Spackman, Henry Eng. Co.	16
Sprague Elec. Co.	1
Spring River Stone Co.	1
Standard Sand & Mac. Co.	1
Star Elect. Fuse Co.	46
Standard Mac. Co.	46
Steam Stone Cutter Co.	1
Stephens & Gerrard	1
Stewart Granite Works	1
Stone Working Mac. Co.	1
Strait, John	14
Stroud, E. H. & Co.	14
Stroudsburg Engine Works	12
Sturtevant Mill Co.	12
Sullivan Mchv. Co.	1

Taylor Iron and Steel Co.	10
Throop A. T.	40
Tensdale, R. J.	48
Thomas Block System	48
Trow & Holden	1

Union Mining Co.	1
U. S. Drying Engineering Co.	50
United States Gypsum Co.	1
Universal Port. Cement Co.	1
Urschel Bates Valve Bag Co.	1
Vulcan Grit Works	1
Warner, Chas. Co.	2
Watt Mining Car Wheel Co.	1
Weber Gas and Gasoline Engine	1
West Leeburg Steel Co.	1
Western Cement Co.	4
Western Lime Co.	6
Wetmore & Morse Granite Co.	60
Wheeling Wall Plaster Co.	4
Whitehall Port. Cement Co.	4
Wichita Coal & Material Co.	44
Wichita Commercial Club	18
Williams, C. K. & Co.	18
Williams Patent Crusher & Pulverizer Co.	14
Winnet Concrete Mac. Co.	1
Winnebago Granite Co.	41
Wisconsin Pulp Plaster Co.	1
Wittekind, H. C.	1
Woodbury Granite Co.	1
Woodville White Lime Co., The	6
Wosham-Major Eng. Works	1
Wulff, W. C. & Co.	1

Yale & Towse Mfg. Co.	1
Young & Kenwright	1
Young Bros.	1

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American Air Compressor Works.	
Chicago Pneumatic Tool Co.	
Clayton Air Comp. Works.	
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Chickamauga Portland Cement Co.	
Chicago Portland Cement Co.	
Dexter Portland Cement.	
Samuel H. French Co.	
German-American Portland Cement Co.	
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Lawrence Cement Co.	
Lehigh Portland Cement Co.	
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Ash Grove White Lime Association.	
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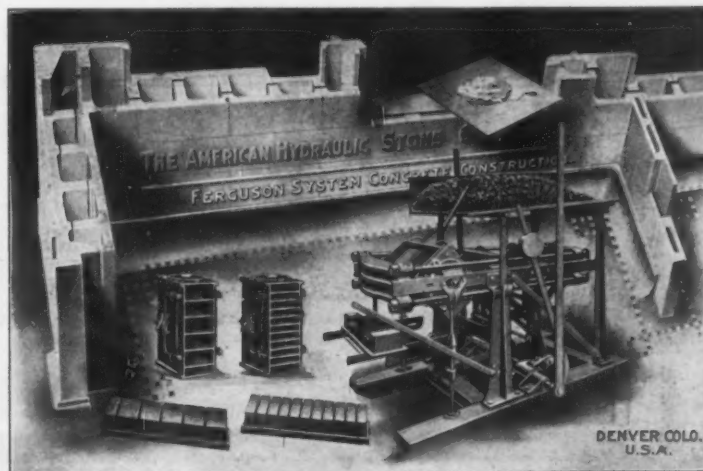
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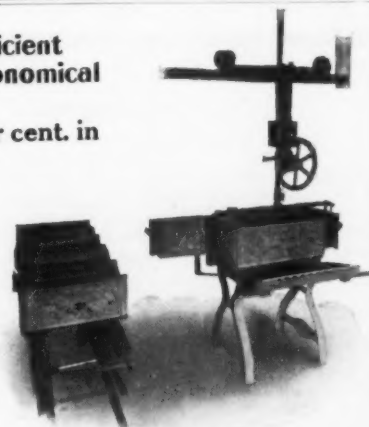
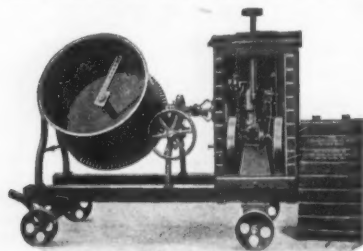
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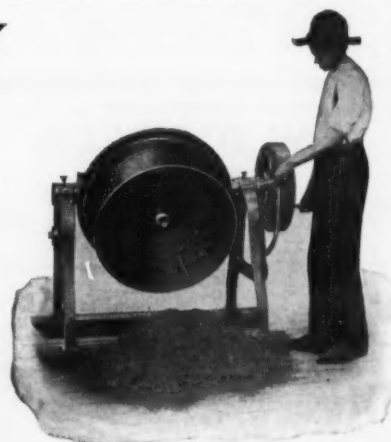
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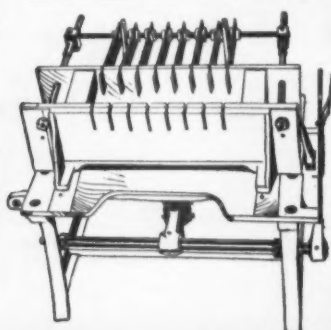
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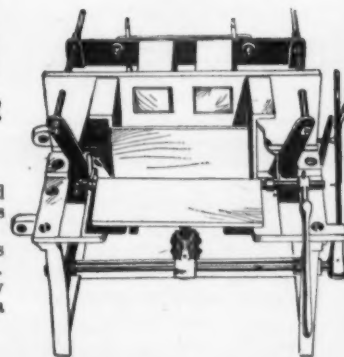
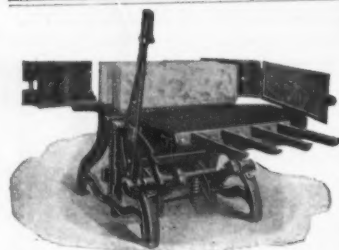
Hand Power Standard Mixer.

South Bend Machine Mfg. Co.,
1807 S. Franklin Street, **SOUTH BEND, INDIANA.**

The "Reed" Machines are in the Lead**SPEED! SPEED! SPEED!**
LOOK AT THIS!

E. W. Ellison, of Peoria, Illinois, reports manufacturing, on our Reed Junior Face Down Machine 210 concrete blocks per day, size 8x10x18 inches with extra Face, working three men who mixed their own material.

Why not get in the race and use a machine that lays your competitors in the shade and permits you to secure the business. Perfect blocks produced. Machines adjustable. Our right angle triangle blocks producing triple hollow walls, excell all others and are guaranteed against frost and fire. You want a machine with speed, and the best wall that can be secured.

**The Wichita Coal and Material Co., Wichita, Kan., U. S. A.**

NORMANDIN.

High-Grade Concrete Block, Brick, Post, Sill, Cap and Mixing Machinery

"Just remember 9"—"We have the Leaders"—"9 of them"

- 1 Normandin Concrete Block Machine (Face Side).
- 2 Peninsular Concrete Block Machine (Face Down).
- 3 Cemaco Concrete Block Machine (Face Side).
- 4 Champion Concrete Veneer Machine (Face Down).
- 5 Favorite Sand Cement Brick Machine with mechanical tamper.
- 6 Systematic Concrete Mixer.
- 7 Universal Cement Post Machines.
- 8 Practical Sill, Cap, Step, Lintel Mold.
- 9 Superior Ornamental Molds—Baluster, Bases and Balls.

Hundreds of Block and Brick plants in operation. The Hollow Block and Brick business is permanent and profitable, broadening in extent every day. It's not a question of material, but is a question of machine.

We are in the business, "first in field, established 1900." We can give you the best value for your money. Write us. Don't delay. Get started. Concrete blocks and brick are in demand. We solicit your trade because we can please you. Our machines are standard; adopted twice by the U. S. Government. Highest awards Universal Exposition, St. Louis, 1904, and Portland Exposition, 1905 for superior excellence.

CEMENT MACHINERY COMPANY, "Cement Bldg." Jackson, Mich.

FAVORITE NO. 1.

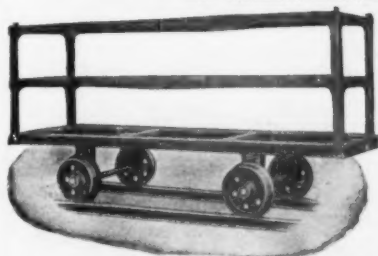
**Architectural Ornaments**Pleasing Effects Can be
Produced by the Use of Our**BALL AND SPINDLE MOLDS**

The cost is light, but rich, effective beauty is secured to your work. No plant can be called complete without them. We provide for the necessity that has been holding the cement industry back. Write to

DEVER'S CEMENT WORKS, CASSOPOLIS, MICHIGAN.

Do not wait till others get the equipment—it will pay for itself on one job.

Roller Bearing Drying and Transfer Cars for CEMENT BLOCKS and BRICK.



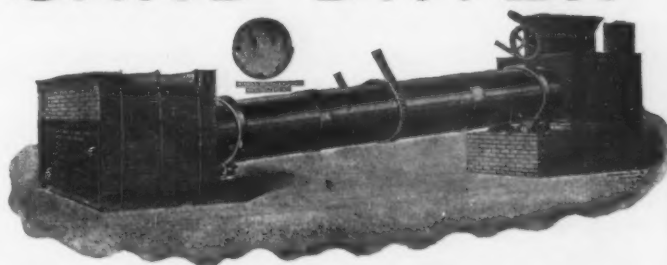
Do not buy a car where the corner braces extend below the beams of the deck as they spoil the end blocks.

The only car that has the center of the decks supported without the annoyance of center legs.

Write us for Catalogue No. 5.

The Chase Fdy. & Mfg. Co.
COLUMBUS, OHIO.

SAND DRYER



Dryers, Screens, Elevating and Conveying Machinery, Mixers, Concrete Building Block Machinery of all kinds, Power Tampers, Etc.
Ask for catalogue and prices.

The Standard Sand and Machine Company,
CLEVELAND, OHIO.

The Dunn Hollow Block Machine



COMPLETE in every detail. Especially adapted to the use of the Block manufacturer. Making blocks in all widths, lengths and many designs, including Sills, Lintels, Pier Blocks, etc.

These Machines Combine the Side Face and Face Down Systems. Price \$100

MASONS AND BUILDERS BLOCK MACHINE

MAKES blocks from 2 to 12 inches in width, up to 20 inches long in different designs. No expensive iron pallets required. A practical, rapid and economical machine for the Mason and Builder. No machine at any price makes better blocks or makes them more rapidly or economically. PRICE \$40

WRITE FOR CATALOGS.

W. E. DUNN & CO., Sole Manufacturers in the U. S., 350 W. Fullerton Ave. Chicago, Ill.

Hayden—the Standard of Merit

the Hayden Machine is built on right principles. Nothing that would go to make the BEST machine is spared.

The Hayden Automatic Concrete Building Block Machine leads the field in every desirable feature. It is face down, of course. Nothing is spared to make it the best. It rests on a foundation of 75 years successful manufacturing experience. The machine received highest award at the World's Fair at St. Louis. Send for the proven facts. Catalog "T."

THE HAYDEN AUTOMATIC BLOCK MACHINE CO.
Columbus, - - - Ohio.

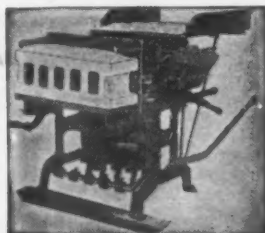
New York and Foreign Office, Hayden Automatic and Equipment Co., 25 Courtland St., New York. Western office, 415 Real Estate Bldg. St. Louis, Mo. Buy a Hayden for results.



IT IS A QUESTION OF ECONOMY

in buying a Concrete Building Block Machine the same as any thing else. You want the best, at the same time the cheapest. The SIMPLICITY fills both of these requirements.

Write for catalogue and further information.



"THE SIMPLICITY."

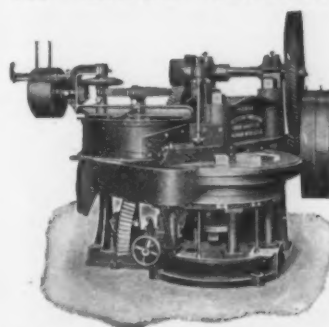
The Standard Sand & Machine Company,

Manufacturers of Labor Saving Machinery.

Address Dept. "D." CLEVELAND, OHIO.

The American Sandstone Brick Machinery Company,

Dept. R. SAGINAW, MICH.



DON'T confuse our practical system with the so-called Scientific Systems. We have the Practical System, the Practical Machinery, the Practical Press, the Practical Hydration and the Practical Outfit, which is manufactured in our own shops, under the supervision of Practical Men with Practical Experience.

Our Plants are installed under the supervision of practical engineers who know how Sand-Lime Brick should be made, and can be made.

We have practical plants running successfully, to show to prospective investors.

We are Not Scientists.

We produce results, because we are the oldest practical Sand-Lime engineering company doing business in the United States, and we defy contradiction. Incorporated April 1902.

Improved Kennick Rotary Presses are now being built right or left hand, with extra table for making face and fancy brick, on which double pressure is exerted. Our patented rotary brush does the work of one man, and keeps the plunger plates clean.

"Big Four Route"

(New York Central Lines.)
BEST LINE TO

Indianapolis, Peoria, Chicago, Toledo, Detroit,
Cleveland, Buffalo, New York, Boston

AND ALL POINTS EAST.

Information cheerfully furnished on application at City Ticket Office, "Big Four Route," No. 259 4th Ave., or write to

S. J. GATES,
General Agent Passenger Department.

H. J. RHEIN,
General Passenger Agent, Cincinnati, O.

To Procure or to Sell Quick—

Try a line or two in the Wanted and
For Sale Department.

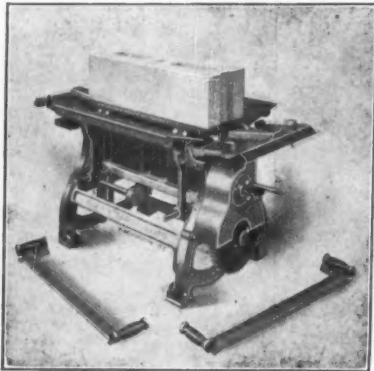
Hayden Mixers are Thorough

The Hayden Mixer is a composite of durability, rapidity and economy. The materials are automatically fed. The drum is made of No. 8 gauge steel plate, made in two sizes. The reel is a spiral arrangement of steel knives. Send for Catalog "B"

The Hayden Automatic Block Machine Co.
Columbus, Ohio.

New York and Foreign Office:
Hayden Automatic and Equipment Co.,
25 Courtlandt St., New York City.





Harmon S. Palmer's Patents Established BY RECENT U. S. COURT DECISIONS.

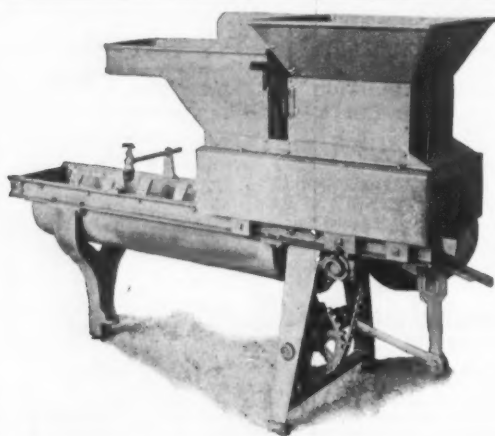
Ours has been an expensive and trying struggle to maintain our rights.

WE OWN THE BASIC PATENTS OF THE HOLLOW CONCRETE BLOCK AND BLOCK MACHINES NUMBERING 159 CLAIMS. OURS THE ONLY MACHINE FREE FROM INFRINGEMENTS.

The patent laws have shown us that not only the maker but the seller and user are liable for infringement. We sell the **STANDARD AND NEW AUTOMATIC**. The automatic machines are either twenty-four or thirty-two inches in length, from four to sixteen inches in width and nine inches high. Will make two piece blocks, staggered air space, two or more at one time if so ordered. We do not claim our machines are the cheaper **ONLY IN THE LONG RUN**. Thousands and thousands of blocks can be made on the machines without perceptible wear. Parts easily adjusted. Simple in construction. We have increased our facilities for business by taking in all of the Cement Machinery Mfg. Co.'s different plants, good will and help. Send for catalogue and let us tell you our plans for selling.

H. S. PALMER CONCRETE BUILDING BLOCK COMPANY,

1450 Girard Street, N. W., WASHINGTON, D. C.



The Standard Continuous Concrete Mixer

"The Mixer that Measures and Mixes."

"You fill the Hoppers, the Mixer does the rest"

CONTINUOUS, AUTOMATIC, FEED EXACT PROPORTIONS.

Materials first Dry Mixed, then "Tempered." Output instantly variable from 0 to Maximum at will of operator, thus insuring Fresh Material for each Block. Feeds Sand and Gravel Dry or Wet.

Write for description and prices to

The Standard Machine Co.,
KENT, OHIO



Cement Building Block the Coming Material.

We are Agents for Machines that Make the Blocks.

We are operating one of the largest block plants in the South, and are in position to demonstrate its success—also manufacturers of crushed stone for concrete purposes.

The Amount of Investment

Necessary to Make Blocks

is Small. . . . Why Not

Be the One in Your Town

to Take Hold of It?

If you will buy the Machine, it will prove a paying investment.

Write us for particulars, also catalogue.

We cheerfully answer all questions.

Newsom Crushed Stone and Quarry Company,

First National Bank Building, :: NASHVILLE, TENNESSEE.

THE PERFECTION POWER BLOCK MACHINE For Making Hollow Concrete Blocks.

The Only Machine Making Hollow Blocks Under High Pressure.

100 TON PRESSURE
ON EVERY BLOCK.

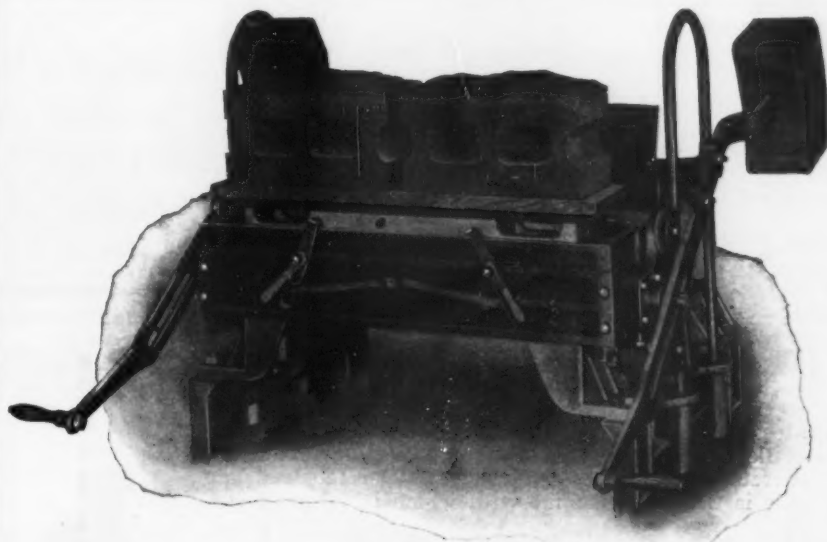
600 TO 1000 BLOCKS
PER DAY.

OUR MACHINE MADE THE SAND-LIME BLOCK ON EXHIBITION
AT THE SAND-LIME BRICK CONVENTION, DETROIT.
WRITE US FOR FULL PARTICULARS.

THE PERFECTION BLOCK MACHINE CO., Kasota Building, Minneapolis, Minn.

ATLAS CEMENT STONE MACHINE

Makes Stones 4 to 16 inches Wide and up to 36 inches Long.



Rear View of Atlas Cement Stone Machine—Showing Method of Delivering Stone.

Experience has demonstrated that a Tamp on the face machine produces the only perfect stone, acceptable alike to mechanic and builder. Here are seven great arguments to back the assertion:

- 1st. It makes a stone that is most impervious to moisture.
- 2nd. Since the face of the stone is made denser, it will not crumble but wear like granite.
- 3rd. It looks like natural stone because of the lighter color.
- 4th. In rock face stone, it makes sharper angles preventing the artificial appearance.
- 5th. It offers the cheapest proposition for coloring stone as the coloring matter is only required in the facing mixture.
- 6th. It offers a saving in cement and yet secures a better stone.
- 7th. It offers the great advantage of allowing the coarser mixture to be introduced much wetter than the facing mixture and thus secures perfect crystallization.

These seven points being made secure in our machine, every difficulty known to the industry is eliminated.

GUARANTEE We guarantee that a stone made on the ATLAS machine will stand a greater crushing strength than one made on any side plate type machine in existence. This is because a mixture wet enough to secure perfect crystallization can be used on our machine.

For Latest Developments in Concrete Machinery, write at once to

Atlas Cement Machinery Co., 617 Chamber of Commerce Building, ROCHESTER, NEW YORK

Excellent Opportunities

for Stone Quarries, Crushers, Lime Plants, etc., are to be found in each of the seventeen states and territories of the West, Southwest and South along the numerous lines of the



Some of these stone deposits have been prospect-
ed sufficiently to warrant their complete development.

Portland Cement Plants

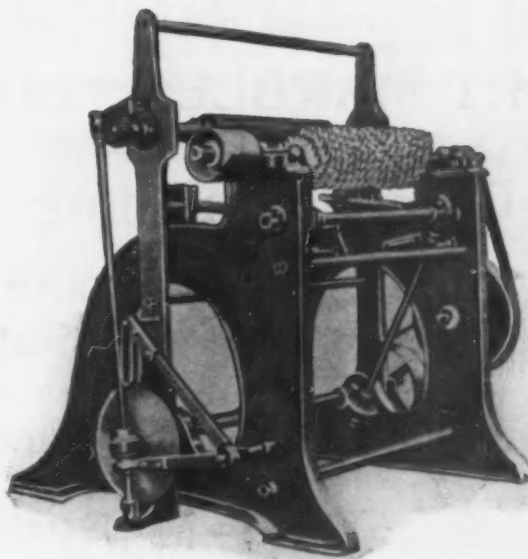
also could be located to excellent advantage at a number of points, as the proper raw materials are found in abundance, and cheap fuel—either natural gas or coal—is procurable.

Send for a copy of illustrated hand book "Opportunities" and other literature about industrial openings along the Rock Island-Frisco Lines.

M. SCHULTER, Industrial Commissioner,
Rock Island-Frisco Lines,
Frisco Building, St. Louis, Mo.

"The Cochran" Automatic Wood Fibre Machine

(PATENTS PENDING)



There is positively nothing cheap or shoddy about this machine, either in workmanship or material.

There are no Sprocket Wheels or Chains, no Cone Pulleys or Cog Wheels to break, get out of order and cause trouble. All the power is transmitted with bevel gears adjusted to "run like a watch."

We call special attention to the "speed increasing mechanism" and automatic action of our machine. When the log is reduced to the size of 2 inches the carriage is automatically released, and swings back to place without being touched by the operator, while at the same time the log stops revolving, without interfering with the other parts of the machine.

The log when finished is revolving six times as fast as at the start and all done automatically and continuously.

Write for catalogue and prices to

Concrete Engineering and Equipment Co.

Butler, Pa.

Greensboro, N. C.



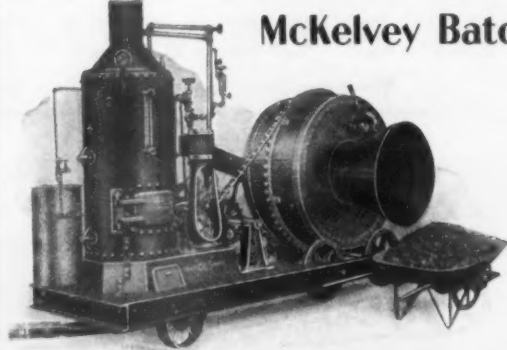
Red, Brown,
Buff and Black
**MORTAR
COLORS**



The Strongest and Most Economical in the Market.

Our Metallic Paints and Mortar Colors are unsurpassed in strength, fineness, and body, durability, covering power and permanency of color. Write for samples and quotations.

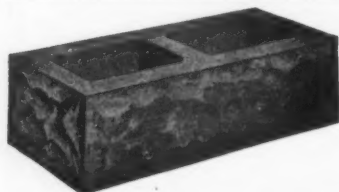
CHATTANOOGA PAINT CO., CHATTANOOGA, TENNESSEE.



McKelvey Batch Mixer

Does not dump under drum and frame. Note the long discharge spout. Its object and advantages explained in new booklet, ask for it. Once used no other is good enough. All sizes.

McKELVEY CONCRETE MACHINERY CO., 171 La Salle St., Chicago 1215 Filbert St., Phila. Pa.



MOVE THE MACHINE—NOT THE BLOCK

Saves labor of offbearing, loss by damage or breakage. Avoids necessity for heavy and expensive iron pallets. Reduces cost of plant and cost of operation. Everybody knows that concrete should not be disturbed after it is moulded or while it is setting, but this is the only machine with which it is possible.

PETTYJOHN

Blocks cost 6 cents to make—Sell for 18 cents. One man can make 200 Blocks per day. Whole outfit costs \$125.00. Figure the profits.

GUARANTEED EVERY WAY—SENT ON TRIAL

THE PETTYJOHN COMPANY

614 NORTH 9th STREET TERRE HAUTE, INDIANA



The Latest Improvement in Building Material.
A Product in Itself, No Imitation.

“ART MARBLE,” “LITHOLITE”

—and—

Concrete Building Blocks.

THE THOMAS

Block and System of Insulated Walls

—combining—

Strength, Durability and Beauty.

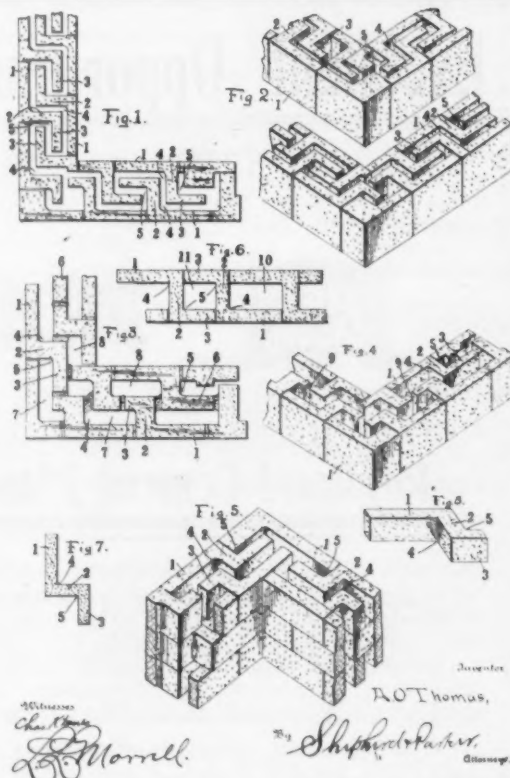
As far superior to common imitation stone as pressed brick is to common, and much cheaper. Our process is based upon scientific principles. Machinery and cost of manufacturing reduced to the minimum.

**BLOCKS NON-ABSORPTIVE
WALLS FROST PROOF**

AGENTS WANTED

**Buy while Introductory Prices
are Offered.**

Patents fully Cover System.



KNUTZEN & ISDELL, General Agents, Kearney, Neb.

Tell 'em you saw it in ROCK PRODUCTS.

Fisher Hydraulic Stone Machinery

**Is the only Machinery
Perfected for making
True Concrete Stone.**

HYDRAULIC POWER SYSTEM.

A 200 Ton pounding, tamping pressure, uniformly applied.

Condenses the concrete 30%.

Same density from center to surface.

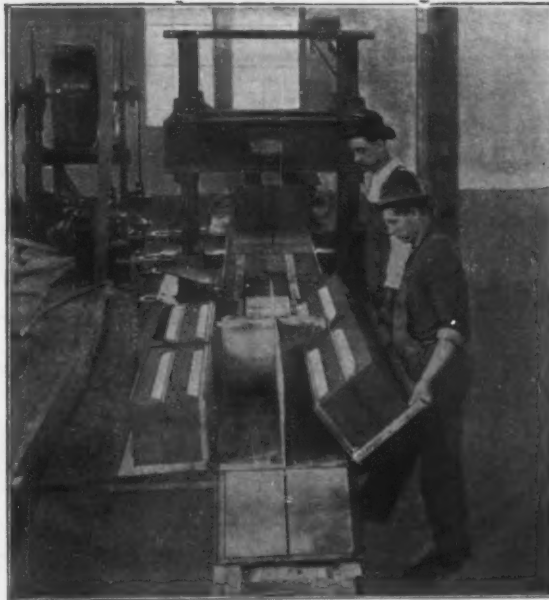
Allows the use of sufficient water to make a plastic mix.

Cement thoroughly crystallized.

These conditions produce true stone of great density and strength.

Stone of all sizes and shapes within dimensions 68x18x9 inches.

ASK FOR CATALOGUE "R"



**Turns out from 1500
to 3000 cubic feet of
stone per day.**

Solves the problem of producing a high grade, reliable building material at moderate cost.

The demand is constantly increasing. Lumber will soon be exhausted.

Cut stone is generally too expensive.

True Concrete Stone will soon be used as extensively for building as it is now used for paving.

By-products of quarries, mines, furnaces, etc., utilized.

INVESTIGATE NOW.

ASK FOR CATALOGUE "R"

Fisher Hydraulic Stone & Machinery Co.

Builders' Exchange Building,

::

BALTIMORE, MARYLAND

The Sensation in Cement Brick

The Peerless Cement Brick Machine is making brick for the new Minneapolis Armory.



All outside walls are made of cement sand brick, which are now being manufactured on the ground by the Peerless Cement Brick Machine.

**Practical
Durable
Economical
Profitable**

One man has made on this machine, over 3,000 perfect brick, in ten hours.

Prices right.

**SEND FOR
CATALOGUE
and PRICE.**



Patent No. 811,518

PEERLESS CEMENT BRICK MACHINE.

Giving you a view after delivering a load. At the top stands the steel facing plate, used only in facing end brick. At the right are tamping mallet, collar and float. On the pallet are ten complete bricks, one showing a rounded corner. Attachments for all forms of ornamental brick furnished extra, and easily adjusted.

Peerless Brick Machine Co.

100 "A" Lumber Exchange,

- -

MINNEAPOLIS, MINNESOTA

Tell 'em you saw it in ROCK PRODUCTS.

The Only Fire-Proof Sand for Cement Brick and Blocks

THE IDEAL SAND FOR SAND-LIME BRICK
 THE BEST SAND
 GLASS MANUFACTURING FOUNDRY PURPOSES
 GLASS BEVELING STONE CUTTING
 PLASTERING AND CONCRETE
 PURE WHITE AND BUFF
 99% Pure Silica
 THE BEST OF KNOWN
 CORE SANDS.
 KENTUCKY SILICA COMPANY, LOUISVILLE, KY. MINES ON I. C. R. R. AT
 TIP TOP, KENTUCKY.

WHEELING WALL PLASTER CO.,

MANUFACTURERS AND JOBBERS

Wheeling Plaster and Builders Supplies.

WHEELING, - - WEST VIRGINIA.



DRYERS

OF EVERY TYPE
 CONSTRUCTED FOR ALL PURPOSES.

BEFORE PLACING YOUR ORDER CONSULT
 UNITED STATES DRYING ENGINEERING CO.
 66 72 BEAVER ST. NEW YORK, U.S.A.

SPECIAL MACHINERY AND FORMULAS

FOR THE MANUFACTURE OF

WOOD FIBER PLASTER, FIRE PROOF-
 ING AND KINDRED PRODUCTS.

We furnish the latest improved FIBER MACHINE, (fully patented),
 also FORMULAS, on a reasonable proposition. The strongest compa-
 nies and oldest manufacturers are operating under my contracts.
 WRITE FOR TERRITORY.

The Ohio Fiber Machinery Co.

J. W. VOGLESONG,
 GENERAL MANAGER.

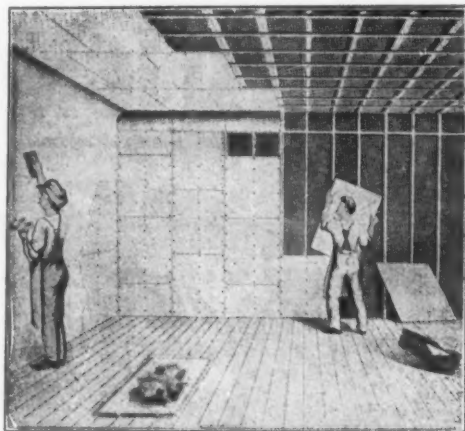
Elyria, Ohio.

KING'S WINDSOR CEMENT FOR PLASTERING WALLS AND CEILINGS

Elastic in its nature, can be applied with 25 per cent. less labor and
 has 12½ per cent. more covering capacity than any other
 similar material.

Buffalo Branch: CHAS. C. CALKINS, Manager
 322 W. Genesee Street

J. B. KING & CO., No. 1 Broadway, New York



Sackett Plaster Board

A material used in the construction of Walls and Ceilings in place of wood and metal lath. Made in Sheets 32" x 36", ¼" thick. Nailed directly to studding and finished with hard plaster.

Sackett Plaster Board is light, economical and durable. Will not warp, buckle or shrink. Is warmer than lath, consequently saves fuel. Is a fire retardant recognized by fire underwriters.

Walls and Ceilings constructed with these boards cannot fall.

GRAND RAPIDS PLASTER CO.

Manufacturers of Wall Plasters,
 Calcined Plasters and other Gypsum Products.

WESTERN SALES AGENT.

GRAND RAPIDS, MICH.

METAL LATH

Bostwick Expanded Metal
 BOSTWICK FIRE-PROOF STEEL LATH

For Plaster Walls and Ceilings, Concrete Re-
 enforcement. Our Flat Lath the Stiffest and
 Most Economical Metal Lath on the Market.
 WRITE FOR SAMPLES AND PRICES.

BOSTWICK STEEL LATH CO.,
 NILES, OHIO.

IMPORTANT CHANGE

Louisville, Henderson & St. Louis Railway
 "THE HENDERSON ROUTE"

On and after April 1, 1906, all trains of this Company will
 arrive at, and depart from 10th Street Station, Tenth and
 Broadway, instead from Seventh Street Depot (formerly
 Union Depot), Louisville, Ky.

J. L. IRWIN, G. P. A.
 LOUISVILLE, KY.

HIGHEST AWARD.
ST. LOUIS EXPOSITION
1904.

RED, BROWN,
BUFF, PURPLE,
BLACK.

For Brick, Mortar, Cement, Stone, etc.

The RICKETSON MINERAL COLORS
COLOR
QUESTION SETTLED

FOR QUALITY AND STRENGTH
WE LEAD.

RICKETSON MINERAL PAINT WORKS, Milwaukee, Wis.

H. L. Graf, Pres. E. T. Silder, Vice-Pres. & Gen'l Mgr. Osborne G. Reilly, Sec. & Treas.

New Albany Wall Plaster Co.
(Incorporated.)

MANUFACTURERS OF

Star and Wood Fiber Wall Plaster.
NEW ALBANY, IND.

We wish to announce to the trade that we are now running and at the present time, are in position to fill all orders promptly. Those who have used our goods claim it is the finest they ever had.

If you have not tried it, we are sure it would be to your interest to do so.

Prices always right and your orders solicited.

NEW ALBANY WALL PLASTER CO.,

NEW ALBANY, IND.

Cumberland Phone 408.
Home Phone 137.

THAT'S IT



Cement Plaster
Wood Fiber Plaster

The Brand that's Made from Pure Gypsum Rock.

Correspondence Solicited.

MANUFACTURED BY

The Plymouth Gypsum Co.
FORT DODGE, IOWA

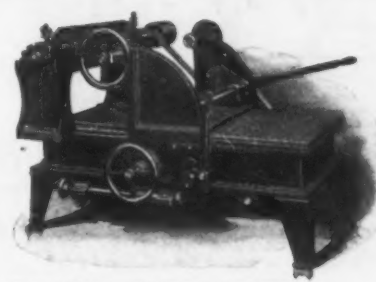
Garry's Genuine
Charcoal Iron Roofing

WILL NOT RUST

If properly cared for. Roofs put on forty
and fifty years ago are now good.

Manufactured Exclusively by
THE GARRY IRON AND STEEL CO.
CLEVELAND, OHIO.

The Leonard Wood Fiber Machine



Has an Automatic, Proportional, Increasing Feed, which keeps grade of fiber uniform from start to finish, and holds machine to highest possible rate of production for the grade of fiber and number of saws. Does not begin with fiber and end with dust, nor fall off in rate of production on each log, from 40 to 80 per cent as do the ordinary non-increasing feed machines. Works logs up to 24x24 inches. No royalty string attached to sale. Pay no attention to misrepresentations of our competitors but write for descriptive circular and terms to

The Shuart-Fuller Mfg. Co.
Successors to

The Elyria Machine Works,
Elyria, Ohio

ELYRIA MACHINE WORKS, Elyria, Ohio

Gentlemen:—We are very much pleased with your machine, as is evidenced by the fact that we are ordering the second one from you. This last machine will take the place of a machine, which we have found takes more power to run, with about one-third the output of your machine.

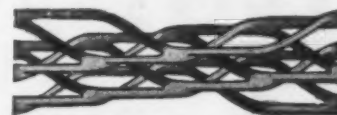
Yours truly,

S. A. WALKER, Vice Pres.
Acme Cement Plaster Co., St. Louis, Mo.

STRONG, DURABLE. NO PLASTER WASTED.

1/2 Actual Size.

1/2 Actual Size.



TRUSS METAL LATH. (Pat.)

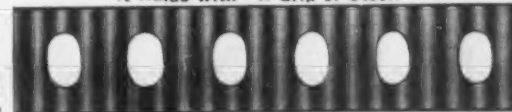


CLINCHER LATH. (Pat.)

THE AMERICAN ROLLING MILL CO., Middletown, Ohio.

It Holds with "A Grip of Steel."

Use
Truss Lath
for Solid
Partitions.
It Requires
No Stiffening
Rods.



Use
Clincher Lath
for Ceilings
and Hollow
Partitions.
The Best for
Pat. Plaster.

BULL DOG WALL TIE. (Pat.)

OLDEST.

STRONGEST.

BEST.

STUCCO RETARDER

Our new Air Separation Plant gives us some
of the finest ground and most uniform
Retarder made, with strength equal to any.
Let us submit sample, and prove it.

Chemical Stucco Retarder Co.

Incorporated 1895.

WEBSTER CITY, IOWA

PATENT SOAPSTONE FINISH

PLAIN AND IN COLORS FOR WALLS AND CEILINGS.

Patent Soapstone Mortar.

Prepared in any Color for Laying Pressed and Enamelled Brick,
Stone Fronts, Terra Cotta, Chimneys, Fire Places Etc.

The Dodge Blackboard Material or Artificial Slate.

The Potter Blackboard Material.

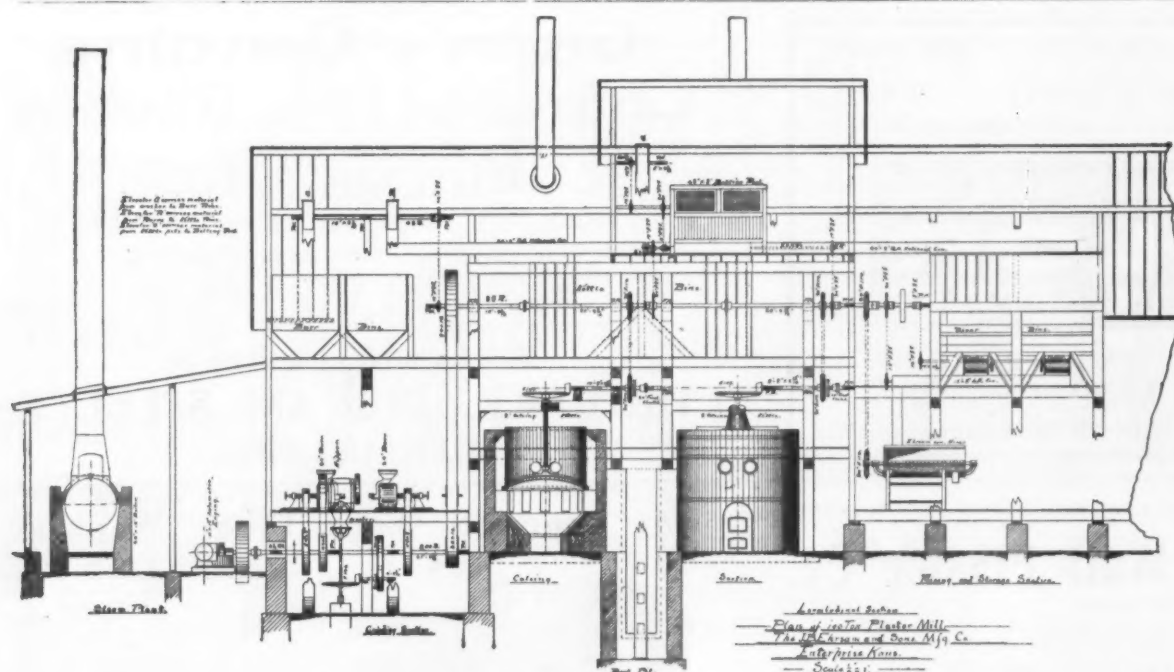
SOAPSTONE MICA, CONCRETE DRESSING.
CRUSHED, GROUND AND BOLTED SOAPSTONE.

AMERICAN SOAPSTONE FINISH CO.

S. P. DODGE, Proprietor.

CHESTER DEPOT, VT.

Tell 'em you saw it in ROCK PRODUCTS.



WE MANUFACTURE

Calcining Kettles
 Jaw Crushers
 Rotary Crushers
 Bolting Reels
 Shaking Screens
 Turkey Emery Rock
 Burr Mills
 Plaster Mixers
 Hair-Pickers
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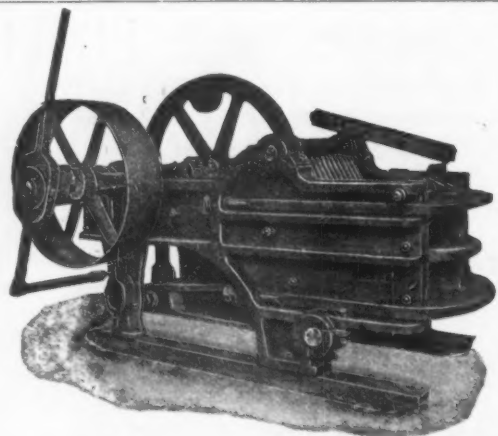
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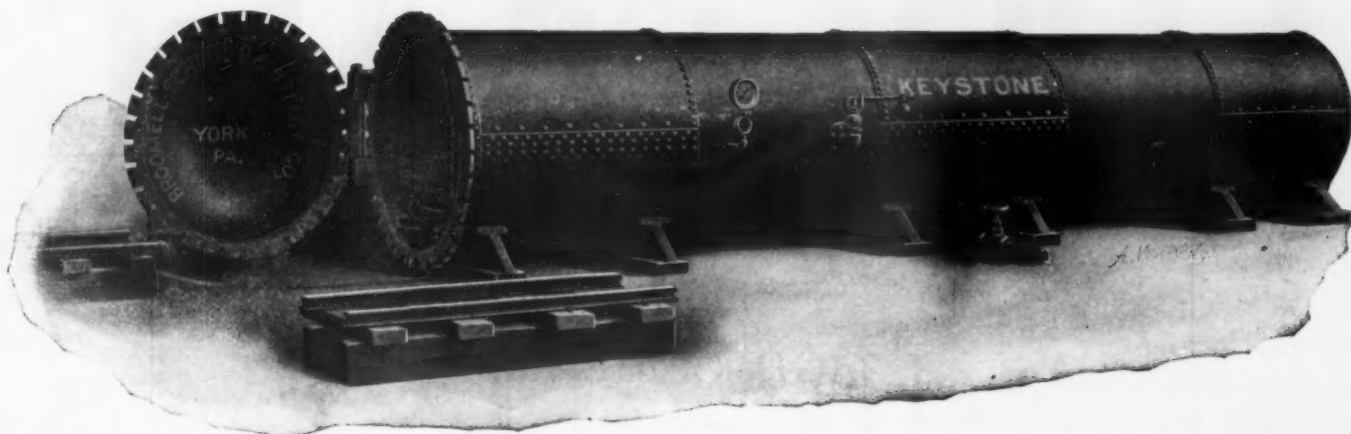
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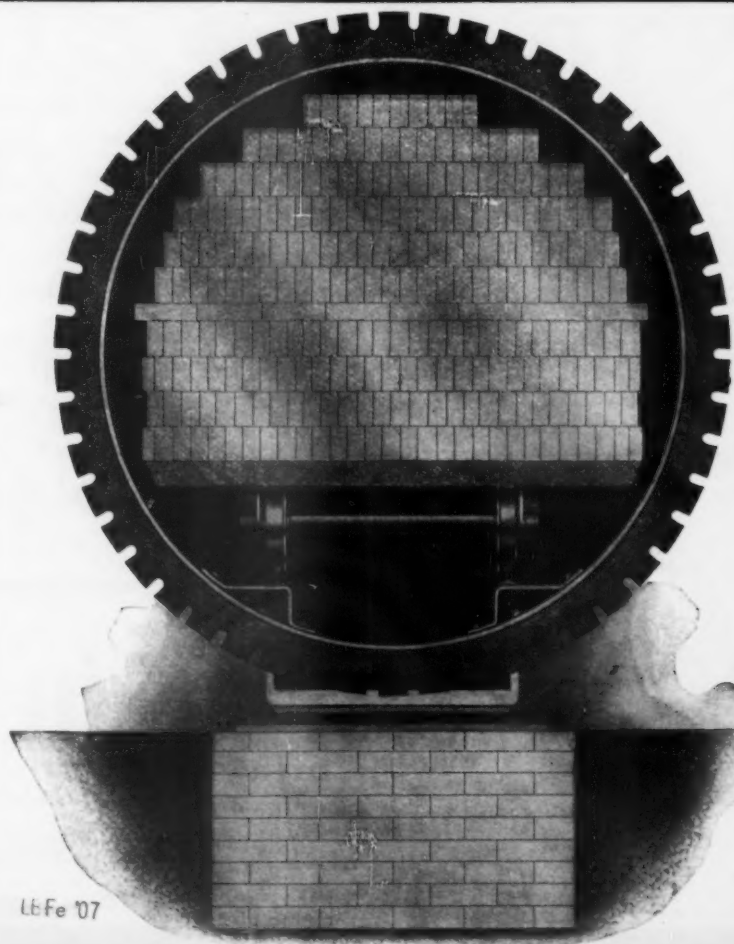
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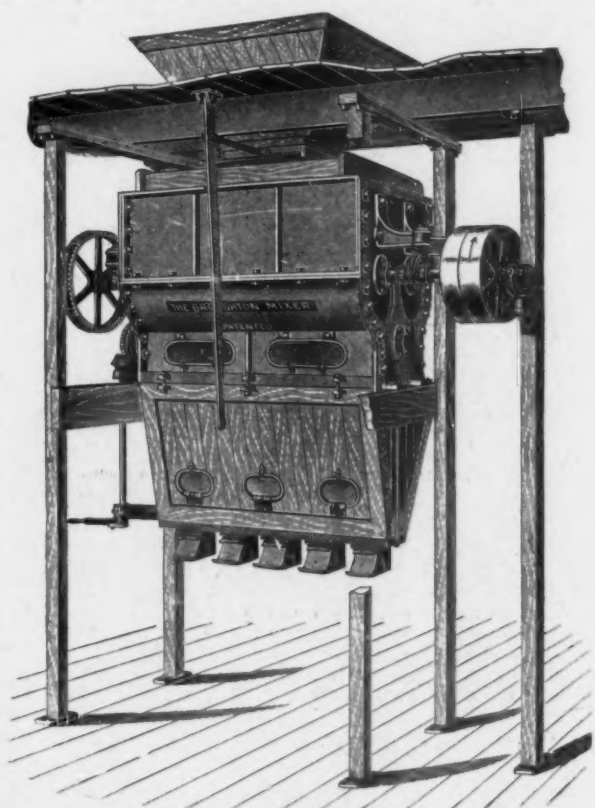
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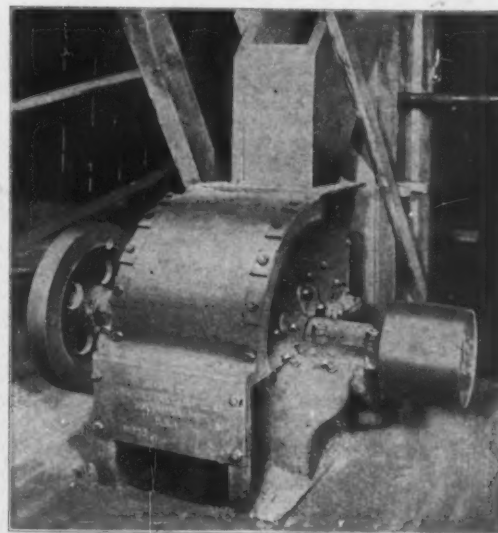
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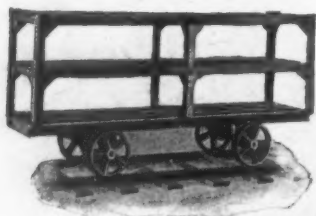
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